



Color Video Camera

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Power HAD EX



MEMORY STICK™

**DXC-D50K/D50PK
DXC-D50L/D50PL
DXC-D50WSL/D50WSPL
DXC-D50H/D50PH
DXC-D50WSH**

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

AVERTISSEMENT

Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

WARNUNG

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

Owner's Record

The model and serial numbers are located on the top. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

PRECAUCIÓN

Peligro de explosión si reemplaza incorrectamente la pila. Reemplázela por otra igual, u otra de tipo equivalente recomendada por el fabricante. Deshágase de las pilas usadas de acuerdo con las instrucciones del fabricante.

ATTENZIONE

C'è pericolo di esplosione se il blocco batteria viene sostituito in modo sbagliato. Sostituire soltanto con lo stesso tipo o uno equivalente consigliato dal produttore. Smaltire i blocchi batteria secondo le istruzioni del produttore.

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

VARNING

Explosionsfare vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For the customers in the USA and Canada

RECYCLING NICKEL-CADMIUM BATTERIES

Nickel Cadmium batteries are recyclable. You can help preserve our environment by returning your unwanted batteries to your nearest point for collection, recycling or proper disposal.

Note: In some areas the disposal of nickel cadmium batteries in household or business trash may be prohibited.



RBRC (Rechargeable Battery Recycling Corporation) advises you about spent battery collection by the following phone number.

Call toll free number: 1-800-822-8837 (United States and Canada only)

Caution: Do not handle damaged or leaking nickel-cadmium batteries.

For safety reasons, be sure to discharge the battery before discarding it.

Pour les utilisateurs aux Etats-Unis et au Canada

RECYCLAGE DES BATTERIES AU NICKEL-CADMIUM

Les batteries au nickel-cadmium sont recyclables. Vous pouvez contribuer à préserver l'environnement en rapportant les batteries usées dans un point de ramassage, recyclage ou retraitement.

Remarque: Dans certain pays, il est interdit de jeter les batteries au nickel-cadmium avec les ordures ménagères ou dans les poubelles de bureau.

Questionnez chez RBRC (Rechargeable Battery Recycling Corporation) pour les batteries usées.

Le numéro est: 1-800-822-8837 (Etats-Unis et Canada uniquement)

Avertissement: Ne pas utiliser des batteries au nickel-cadmium qui sont endommagées ou qui fuient.

Par mesure de sécurité, déchargez bien la batterie avant de la jeter.

For customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in Europe (for DXC-D50PK/D50PL/D50WSPL/D50PH)

This product with the CE marking complies with the EMC Directive (89/336/EEC) issued by the Commission of the European Community.

Compliance with this directive implies conformity to the following European standards:

- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment(s):

E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

Pour les clients européens (pour les DXC-D50PK/D50PL/D50WSPL/D50PH)

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) émise par la Commission de la Communauté Européenne. La conformité à cette directive implique la conformité aux normes européennes suivantes:

- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants:

E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé, ex. studio de télévision).

Für Kunden in Europa (für DXC-D50PK/D50PL/D50WSPL/D50PH)

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie (89/336/EWG) der EG-Kommission.

Angewandter Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit),

für die folgenden elektromagnetischen Umgebungen:

E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtgebiet im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

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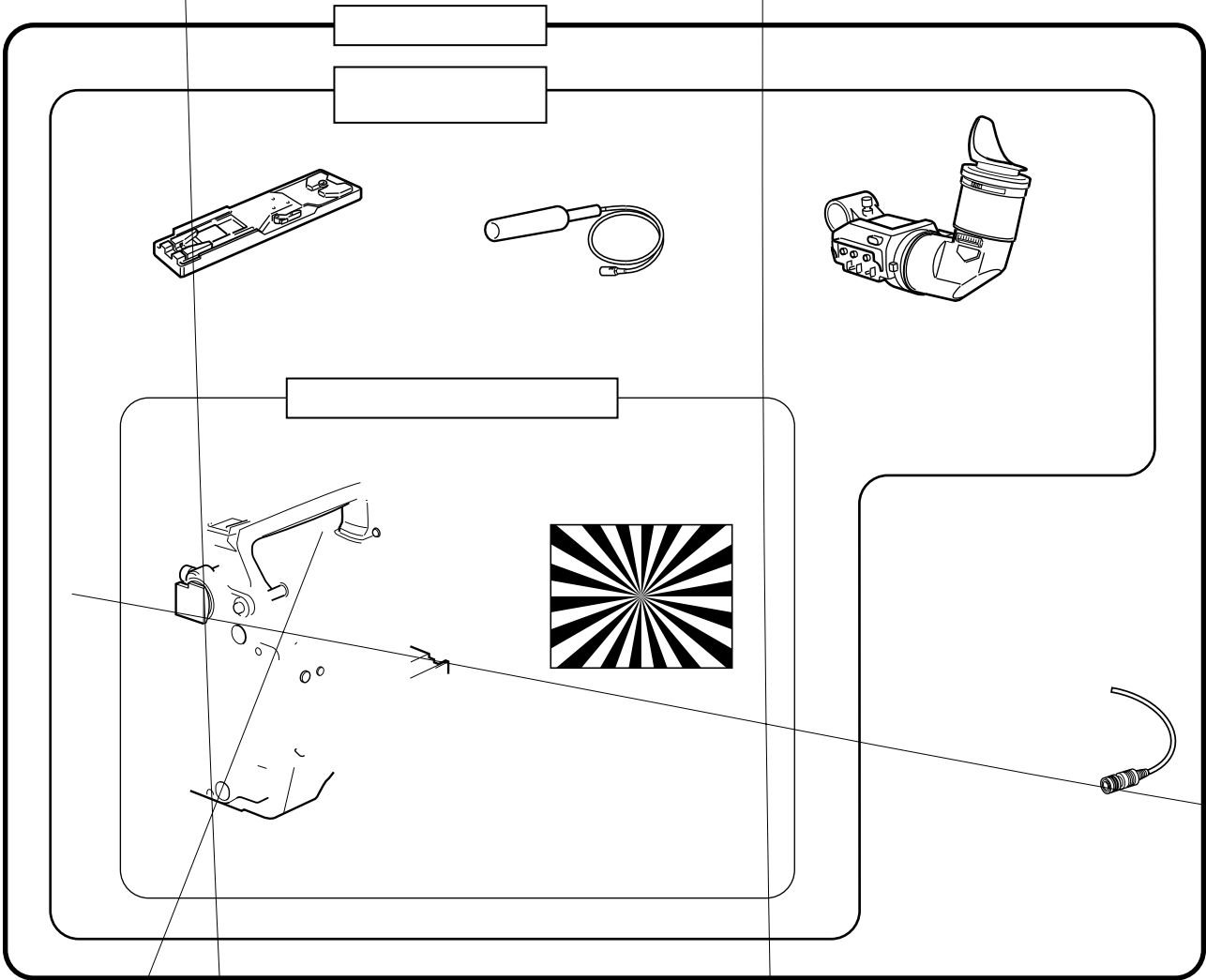
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Overview

Product Configurations

The nine models, DXC-D50K, DXC-D50L/D50WSL, DXC-D50H, DXC-D50PK, DXC-D50PL/D50WSPL, DXC-D50PH, and DXC-D50WSH, comprise both

NTSC and PAL versions and the components as shown in the figure on next page. The operation of the basic camera unit is the same in all cases.



Features on the DXC-D50/D50P/ D50WS/D50WSP

The DXC-D50WS/S50WSP is a 16:9 wide-screen type (4:3-16:9 switchable) digital video camera while the DXC-D50/D50P is a 4:3 standard-screen type digital video camera. Common features on both types are described in this section. See also “Features on the DXC-D50WS/D50WSP” (*page 11*) for using the DXC-D50WS/D50WSP.

Newly developed $\frac{2}{3}$ -inch IT type Power HAD (EX) CCD

The DXC-D50/D50P Color Video Camera uses $\frac{2}{3}$ -inch IT type Power HAD CCDs. (For the DXC-D50WS/D50WSP, Power HAD EX CCDs for wide screen are used.) It outperforms most of the exiting FIT type CCD cameras, in smear, sensitivity, and signal-to-noise ratio.

- Smear: -140 dB
- Sensitivity: F11.0 (at 3200 K, 2000 lux)
- S/N: 65 dB (NTSC)
63 dB (PAL)

Various image processing

TruEye™ processing makes possible the following performance features. This digital signal processing has brought reproduction of natural colors to the level achieved by the human eye.

Adaptive highlight control

Enables detailed adjustment of contrast control of each pixel in response to a histogram of luminance signal levels. This adjustment is automatically optimized for the desired scene and is effective for shooting a scene with bright and dark areas.

Knee saturation control

Prevents white breakup when shooting a high intensity subject, and also prevents color faults in high intensity subject.

Black gamma control

Enables control of luminance signal levels in black areas without changing the hue.

Variety of detail corrections

- Skin detail function: this function gives a slightly softer appearance to the subject's face. The target skin color can be easily set with the Menu operation.
- Black halo correction
- Red/green vertical detail correction: this function performs vertical detail compensation for both red and green signals.
- Horizontal detail frequency control

Low key saturation

Enables color correction of dark areas where color reproduction is difficult.

Cross color suppression

The digital 3-line comb filter enables virtual elimination of frequency elements from the Y/R-Y/B-Y signals, decreasing the cross color and cross luminance to the minimum.

Recording and managing scene file data

The DXC-D50/D50P/D50WS/D50WSP is equipped with the following functions to facilitate camera head setup.

Scene file system

Using scene files, you can store setting data for up to 20 scenes in the camera.

File operation using a Memory Stick

You can store a scene file into a Memory Stick and easily retrieve the stored file to reproduce the same setup conditions. A scene file stored in the Memory Stick can be retrieved by other DXC-D50/D50P/D50WS/D50WSP cameras or the RCP-D50/D51 Remote Control Panel to easily share the same setup among several cameras. It is also possible for a PC with a slot for a Memory Stick to read scene data and transfer the data to a camera at a distant location.

Preset matrix

You can quickly make a setup of the camera using matrix files for factory-preset standard lighting conditions, such as STD (STANDARD), HI SAT (HIGH SATURATION), and FL (FLUORESCENT).

Features

Dockable with various types of VTRs

The DXC-D50/D50P/D50WS/D50WSP docks with the DSR-1/1P DVCAM VTR to configure a digital camcorder. It also docks with the PVV-3/3P Betacam SP VTR to configure a Betacam SP camcorder.

New Functions boost operability

EZ (easy) mode function

By simply pressing the EZ MODE button, you can start shooting with the Total Level Control (TLCS) and Auto Tracing White Balance (ATW) functions activated with standard camera settings.

EZ (easy) focus

The aperture is automatically adjusted so that the depth of field becomes shallow for easy focusing. Optimal exposure is also automatically adjusted.

Programmable gain

The amount of gain relative to the GAIN switch setting (H, M, or L) can be programmed as -3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 18 dB, 24 dB, 30 dB, and 36 dB.

Auto tracing white balance (ATW)

This function automatically traces the white balance, which constantly changes as lighting conditions change. Auto tracing white balance is especially useful when there is no time to manually adjust the white balance or when shooting moves between indoor and outdoor locations.

Dual zebra pattern display

Two types of zebra patterns, zebra 1 and zebra 2 can be displayed simultaneously or independently in the viewfinder. The zebra 1 can be set to the levels ranging from 50 to 109 IRE on the DXC-D50/D50WS (or from 50 to 109% on the DXC-D50P/D50WSP) and the zebra 2 indicates the levels of 50 IRE or more for the DXC-D50/D50WS (or the levels of 50% or more for the DXC-D50P/D50WSP).

Video monitor output with text

The video signal with text superimposed that is shown in the viewfinder can also be output to an external video monitor.

1-kHz audio reference signal output

A 1-kHz audio reference signal can also be output during color-bar-output mode.

Edit Search Function (when using DSR-1/1P)

When using the DXC-D50/D50P/D50WS/D50WSP with the DSR-1/1P, pressing the EDIT SEARCH buttons allow the tape to play back in search mode. Set either of two playback speeds.

Optical ND filters and electronic CC filters

Ideal light-quantity and color controls are enabled with the optical ND filters and electronic CC filters. Color corrections are performed electronically, and the optical ND filters easily control the depth of field and the exposure. The electronic CC filters can be remotely controlled.

Clear scan function

A computer screen can be shot with a minimum of interference by a horizontal roll and flicker, thanks to the clear scan function, which enables the shutter speed to accurately match the scan frequency of the computer screen. The shutter speed can be varied in the range of 60.38 to 6,000 Hz.

Other functions

Variable electronic shutter
Monitor output
EVS (Enhanced Vertical-Definition System)
Automatic aperture mode
Low-cut microphone output

Designed for ease of operation

Front-to-back-position adjustable shoulder pad

The front-to-back position of the shoulder pad can be adjusted so that the camera is stable on the shoulder. You can replace the shoulder pad with the flexible Dynafit Pad designed for the DSR-390/390P and DSR-570WS/570WSP. For use with the Dynafit Pad, consult your Sony dealer.

Slide cover

The slide cover can hide the switches and buttons that are seldom used during shooting.

High-performance viewfinder (DXF-801/801CE)

- High resolution (600 TV lines of horizontal resolution)
- Large-diameter eye cup for easier viewing and focusing
- PEAKING potentiometer for vertical and horizontal detail control
- Two indicators can be used as TALLY indicators.
- Tough die-cast aluminum body
- DISPLAY switch that can turn the character display on and off
- Light that can light the lens control elements
- Switching the aspect ratio automatically between 16:9 (wide screen) and 4:3 (standard screen) when used with the DXC-D50WS/D50WSP

VTR data display

When connected to a VTR, the DXC-D50/D50P/D50WS/D50WSP is able to display the following data on the viewfinder screen.

- Time values (counter, time code, or user bit values)
- VTR audio levels
- Remaining tape time
- VTR operation mode
- Remaining battery capacity (when using an Anton Bauer Intelligent Battery System)

Features on the DXC-D50WS/D50WSP

Features only on the DXC-D50WS/D50WSP is described in this section. See “Features on the DXC-D50/D50P/D50WS/D50WSP” (page 9) for common features on a 4:3 standard-screen type digital video camera and 16:9 wide-screen type digital video camera.

Switchable between 16:9 and 4:3 aspect ratios

A simple menu operation provides instant switching between the 16:9 and 4:3 aspect ratios. In 4:3 mode, a screen equivalent to a 4:3 screen is obtained through digital processing of the 16:9 video signals produced by the wide aspect CCD. (See page 67.)

Wide-aspect ID signals

A menu setting is available to add wide-aspect ID signals¹⁾ to 16:9-mode video signals.²⁾ (See page 67.)

Selection of the safety zone size in 16:9 mode

When the aspect ratio is 16:9, you can change the safety zone size through menu setting (see page 61.)

1) ID signals complying with EIAJ CPR-1204 (DXC-D50WS) or complying with ETS WSS (DXC-D50WSP).

2) Video signals refer to the following:

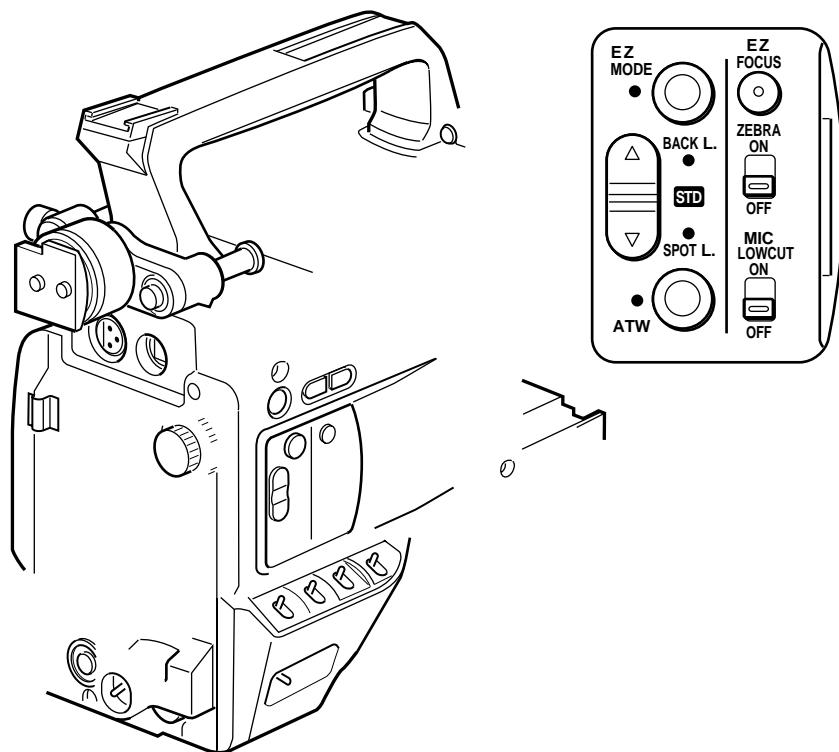
- Video signals output from the VIDEO OUT connector and MONITOR OUT connector.
- The Y component of Y/C separate signals and the Y component of component signals output from the VTR connector.

Location and Function of Parts

Camera Head

Before attaching/detaching peripheral equipment to/from the camera head, be sure to turn off the camera. Otherwise, the camera may not function properly.

Right side view



1 5600K button

When this button is pressed (lit,) the standard color temperature for shooting is switched to 5600K. Use this button for outdoor shooting in daytime or shooting under lighting with higher color temperature. When the white balance is adjusted while the Wide Band White Balance is set, the button may go on or off automatically.

2 EDIT SEARCH buttons (for operation with DSR-1/1P)

When using the DSR-1/1P to record, you can see the search playback while pressing either of these buttons at recording pause mode to quickly find the next recording start point. Two playback speeds are available, and press either of the buttons to the inner position to increase the speed.

3 A.IRIS (auto aperture) MODE switch and indicator

When you use the auto aperture function (by setting the aperture selector on the lens to A), set this switch to suit the shooting conditions. Selecting BACK L. gives more light to back-lit subjects, and selecting SPOT L. adjusts for high contrast in spot-lit subjects. For normal shooting, set this switch to STD.

4 EZ (“easy”) MODE button and indicator

Depress this button (EZ mode on) when you want to be able to shoot immediately, with automatic adjustment of the camera settings to standard values. When this function is used, the aperture and the white balance are adjusted automatically. Press this button again to return the camera to the previous settings (EZ mode off).

Note

When connecting the CCU-D50/D50P/TX50/TX50P Camera Control Unit or the RM-M7G Remote Control Unit, RCP-D50/D51 Remote Control Panel, the “easy mode” function is disabled.

5 EZ FOCUS button

Press this button to turn the “easy focus” function on. This opens the aperture, to make it easier to focus before beginning shooting. The indication “EZ FOCUS” appears in the viewfinder while the function is on; to turn it off, press the EZ FOCUS button again. If left on, the function automatically turns off after about ten seconds.

Note

If the “easy focus” function is still on when you press the VTR button, it turns off automatically and recording starts.

6 ZEBRA switch

Set this switch to the ON position to display a zebra pattern (diagonal stripes) in the viewfinder. Depending on the zebra setting on page 9 of the OPERATION menu (*page 61*), the zebra 1 for video levels between 50 to 109 IRE (or 70 to 90%) and the zebra 2 for video levels 50 to 109 IRE or more (or 100% or more) can be displayed independently or simultaneously.

7 MIC LOW CUT switch

Set this switch to the ON position to insert a high-pass filter in the microphone circuit, reducing wind noise. Normally leave the switch in the OFF position.

8 ATW (auto tracing white balance) button and indicator

Press this button, turning the indicator on, when you want the white balance to be adjusted automatically to follow changes in lighting conditions. (*See page 76.*)

9 Memory Stick slot

Insert a Memory Stick for storage of file data.

For details, see “Notes on Memory Sticks” on page 40.

10 MENU switch

When you press this switch to the ON/CANCEL position, the USER menu is displayed. When you press the switch to the OFF/STATUS position, the DXC-D50/D50P/D50WS/D50WSP’s status (of current settings) is displayed.

11 W. BAL (white balance) switch

This selects the white balance setting from the preset value, the value in memory A or the value in memory B. (*See page 73.*)

Location and Function of Parts

12 OUTPUT/DCC (Color bar output/dynamic contrast control) switch

Use this switch to select the DCC function or color bar output.

Select the CAM/ON position in most cases.

CAM/ON: This activates the DCC function. This prevents color faults when shooting high-intensity subjects.

CAM/OFF: When the DCC functions are disabled, you can manually adjust knee values on page P5 <KNEE/WHITE CLIP> of the PAINT menu. (*See page 64*).

BARS: This setting displays color bars.

13 MENU dial

Turn this dial to change menu pages, items, or setting values, and press it to register.

For details on menu operation, see Chapter 4 “Viewfinder Screen Indications and Menus” (page 49).

14 POWER switch

This powers the camera on and off. There are two different ON settings as follows.

ON STBY: This puts the VTR on standby. In this state, pressing the VTR button on the camera head, the lens or a camera adaptor starts recording immediately.

ON SAVE: This puts the VTR in the power-saving state, with the video head drum stationary. In this state, it takes a few seconds to start recording after pressing the VTR button.

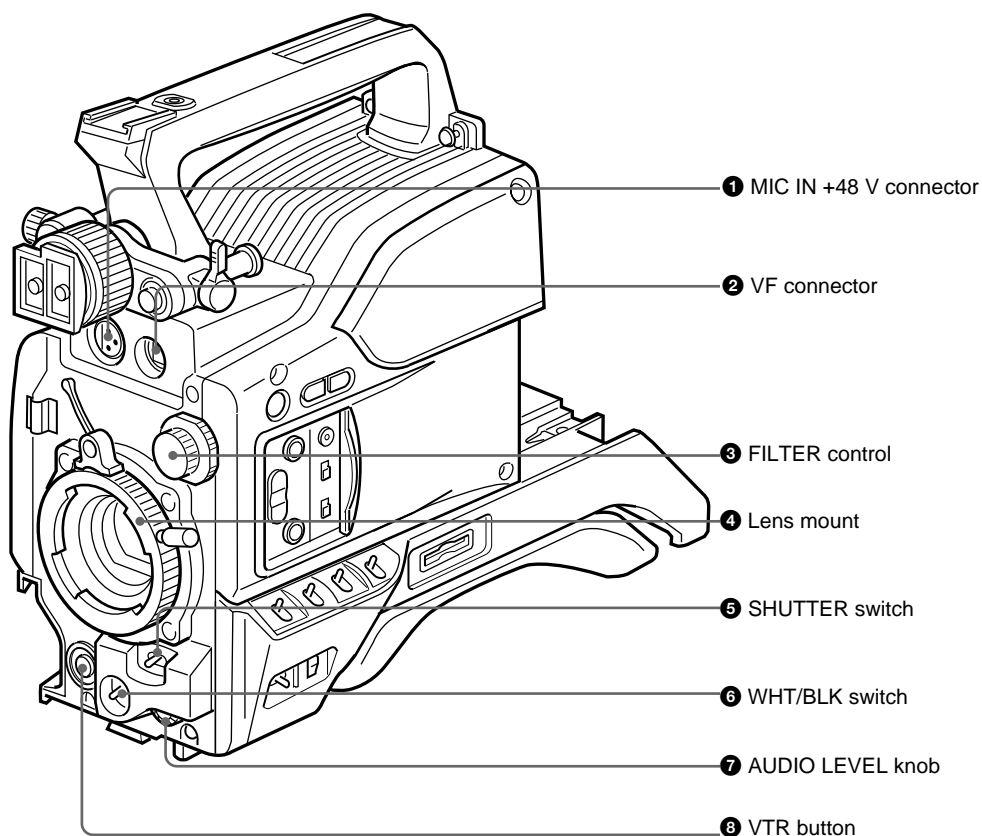
Note

The VTR state when this switch is in the ON STBY or ON SAVE position may depend on the VTR model.

15 GAIN switch

This selects one of the three gain settings, high, medium or low. You can choose the gain values assigned to the H, M and L settings from values from -3 dB to +36 dB. (*See page 60.*) The factory default selections are 18 dB (H), 9 dB (M) and 0 dB (L).

Front view



❶ MIC (microphone) IN +48 V connector (XLR 3-pin, female)

Connect the supplied microphone or an optional microphone (operable with a +48 V supply).

❷ VF (viewfinder) connector (20-pin)

This is the connector for the DXF-801/801CE viewfinder.

❸ FILTER control

Select the ND filter appropriate to the lighting conditions. (See page 44.)

❹ Lens mount

Attach the zoom lens here.

❺ SHUTTER switch

Use this switch to turn the shutter on/off, or set the shutter speed or CLS (clear scan) setting (see page 78). Usually, set this switch to OFF.

❻ WHT/BLK (white balance/black balance) switch

This switch is used for automatic adjustment of the white balance and black balance. (See pages 73 to 77.)

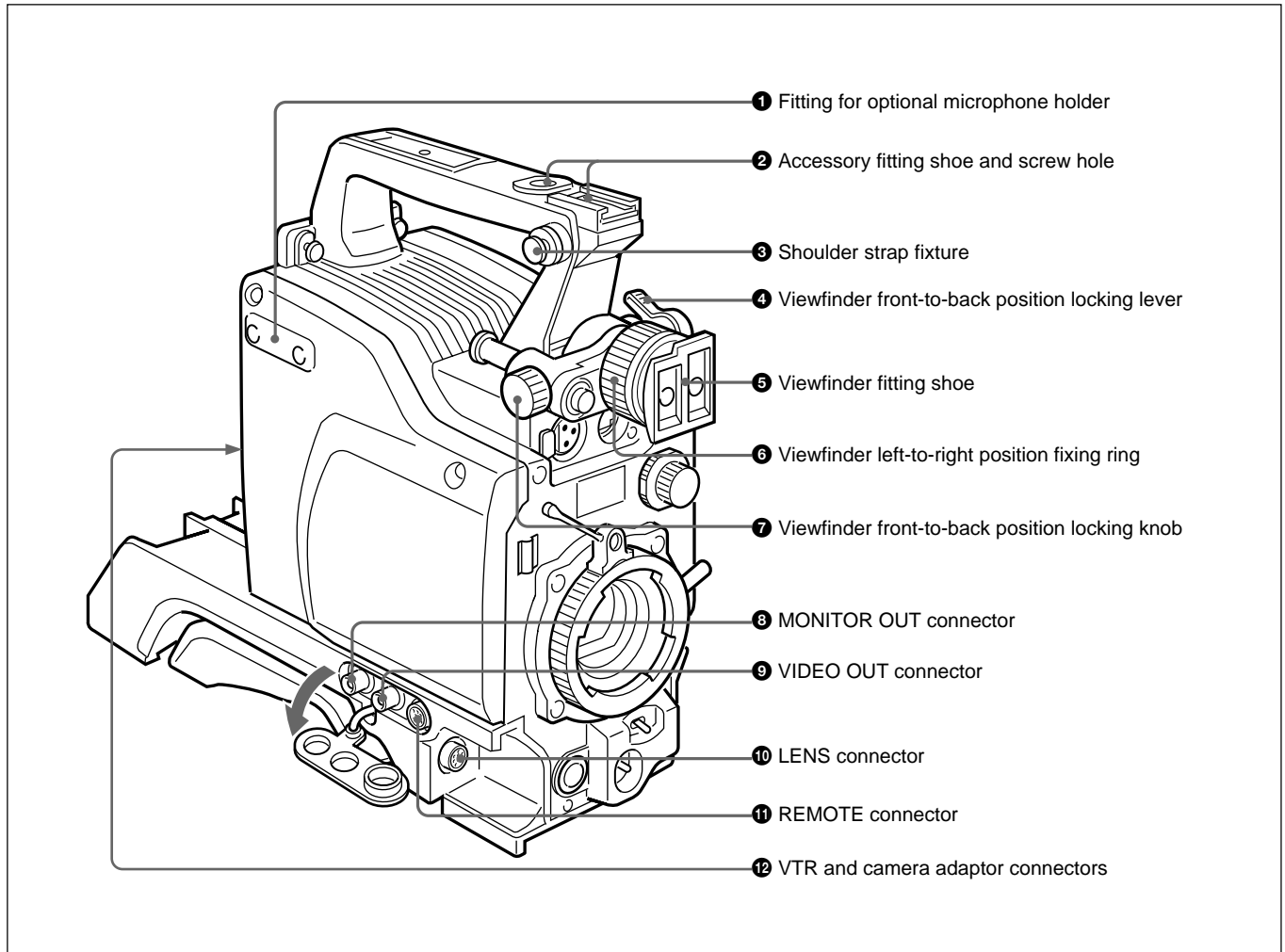
❼ AUDIO LEVEL knob

When the DSR-1/IP is attached, you can use this knob to manually adjust the channel 1 audio recording level.

❽ VTR button

Pressing this button starts and stops recording on the VTR.

Left and upper view



❶ Fitting for optional microphone holder

You can fit an optional CAC-12 Microphone Holder here. (See page 32.)

❷ Accessory fitting shoe and screw hole

Attach optional video lights or other accessories here.

❸ Shoulder strap fixture

To use the shoulder strap supplied with the VTR, fix one end here and the other end to the VTR.

❹ Viewfinder front-to-back position locking lever

Release this lever to adjust the front-to-back position of the viewfinder. (See page 31.)

❺ Viewfinder fitting shoe

Fix the DXF-801/801CE Viewfinder here.

❻ Viewfinder left-to-right position fixing ring

Loosen this ring to adjust the left-to-right position of the viewfinder. (See page 31.)

❼ Viewfinder front-to-back position locking knob

Loosen this knob to adjust the front-to-back position of the viewfinder. (See page 31.)

❽ MONITOR OUT connector (BNC)

Outputs both the camera video and the character information as displayed on the viewfinder screen. You can connect an optional LCD color monitor to this connector.

❾ VIDEO OUT connector (BNC)

This outputs the video signal captured by the camera.

⑩ LENS connector (12-pin, for 2/3-inch lens)

Connect the lens connector.

⑪ REMOTE connector (10-pin)

Connect the optional RM-M7G Remote Control Unit, or the RCP-TX7 or RCP-D50/D51 Remote Control Panel to this connector. Set the CAMERA HEAD SELECT switch on the bottom of RM-M7G to 1.

Note

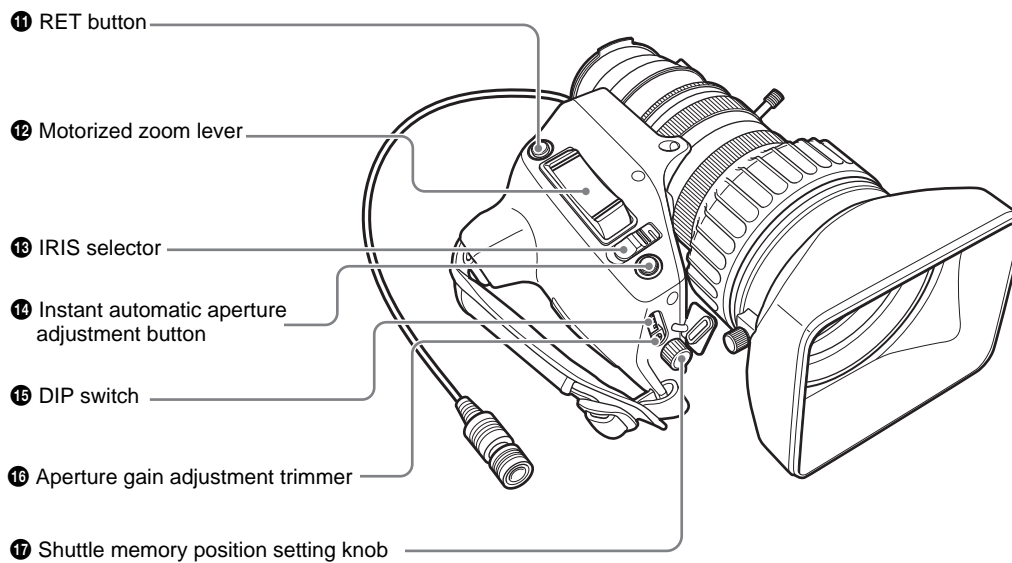
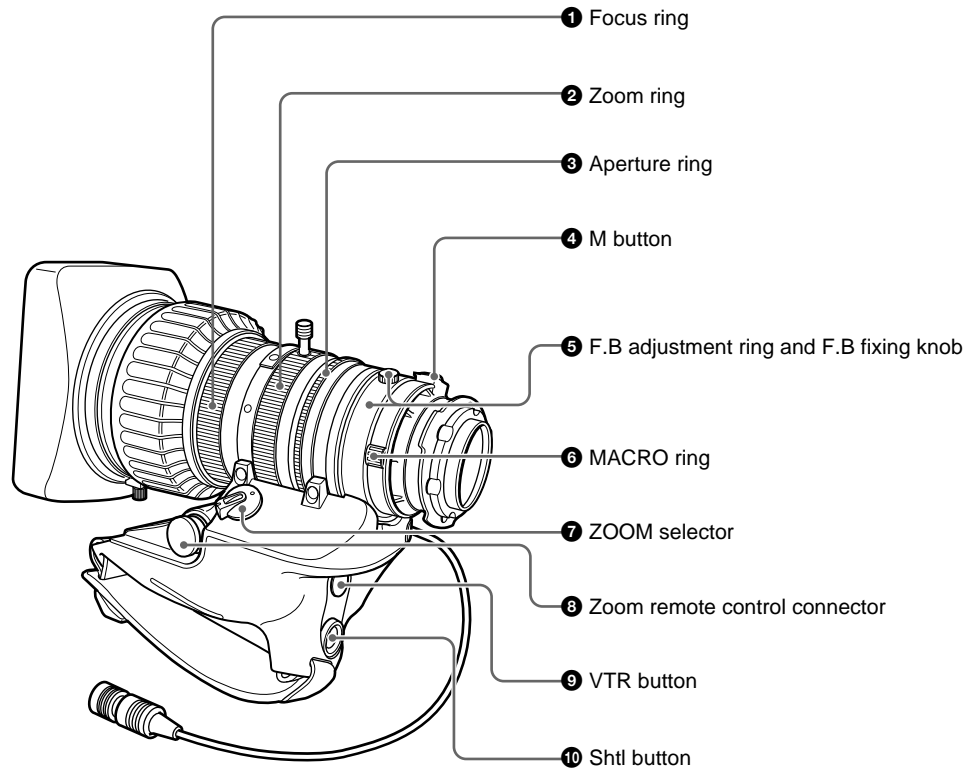
When using a remote control unit or a remote control panel, note the following points.

- When operating the camera head from the camera control unit, connect the remote control unit or remote control panel to the camera control unit.
- EZ mode cannot be used if a remote control unit or a remote control panel is connected to the camera head.
- Before attaching/detaching the remote control unit or remote control panel to/from the camera head, be sure to turn off the camera. Otherwise, the camera may not function properly.

⑫ VTR and camera adaptor connectors (PRO 76-pin DIGITAL and PRO 50-pin)

Connect a dockable VTR or a camera adaptor. A PRO 76-pin DIGITAL connector is for the DSR-1/1P and the CA-D50/D50P and CA-TX50/TX50P camera adaptor, and a PRO 50-pin connector is for the PVV-3/3P.

VCL-919BY Zoom Lens



① Focus ring

Turn this ring to focus the lens on the subject.

② Zoom ring

For direct manual zoom control, set the ZOOM selector **⑦** to the “MANU.” position, and turn this ring.

③ Aperture ring

For manual aperture control, set the IRIS selector **⑬** to the “M” position, and turn this ring.

④ M (close-up) button

For close-up work, turn the MACRO ring **⑥** while holding this button down. (See page 85.)

⑤ F.B (flange focal length) adjustment ring and F.B fixing knob

F.B adjustment ring : To adjust the flange focal length, loosen the F.B fixing knob, then turn the ring. (See page 82.)

F.B fixing knob: Fixes the F.B adjustment ring.

⑥ MACRO (close-up) ring

For close-up, turn this ring while holding the M button **④** down. (See page 85.)

⑦ ZOOM selector

This selects the mode of zoom operation.

SERVO: power zoom

MANU. (manual): manual zoom

⑧ Zoom remote control connector (8-pin)

Connect the optional LO-26 lens remote control unit for remote control of zooming.

⑨ VTR button

When operating with a VTR: this button starts and stops recording, and once more to stop.

When operating with a CCU-D50/D50P Camera Control Unit connected: pressing this button

connects the return video signal from the camera control unit to the viewfinder.

(Starting and stopping recording is controlled on the VTR.)

When operating with a CCU-TX50/TX50P Camera

Control Unit connected: pressing this button connects the intercom audio signal from the camera to the camera control unit.

⑩ Shtl (shuttle shot) button

Use this button for the shuttle shot function.

⑪ RET (return video) button

This allows you to check the video signal as follows.

When operating with a portable VTR connected via other equipment: when the VTR is in recording, pressing this button connects the E-E video signal¹⁾ from the VTR to the viewfinder.

When operating with a DSR-1/1P or PVV-3/3P mounted on the camera head: when the VTR is in recording pause mode, press this button to review the last few seconds of the recording in the viewfinder (recording review).

When operating with a CCU-D50/D50P/TX50/TX50P Camera Control Unit connected:

pressing this button connects the return video signal from the camera control unit to the viewfinder.

When this button is not pressed, the viewfinder displays the video signal captured by the camera.

⑫ Motorized zoom lever

Use this to carry out a power zoom. Pressing the lever harder increases the zoom speed.

W end: zoom toward wide angle

T end: zoom toward telephoto

⑬ IRIS selector

This selects the mode of aperture operation.

A (automatic): automatic aperture

M (manual): manual aperture

⑭ Instant automatic aperture adjustment button

While using manual aperture control, press this button to switch temporarily to the automatic aperture control setting. The automatic setting is maintained as long as you hold the button down.

⑮ DIP switch

The DIP switch for the shuttle shot function. Usually this switch is covered by a rubber cap.

⑯ Aperture gain adjustment trimmer

Use this to adjust the aperture gain. Usually the trimmer is covered by a rubber cap.

⑰ Shuttle memory position setting knob

Use this button for the shuttle shot function.

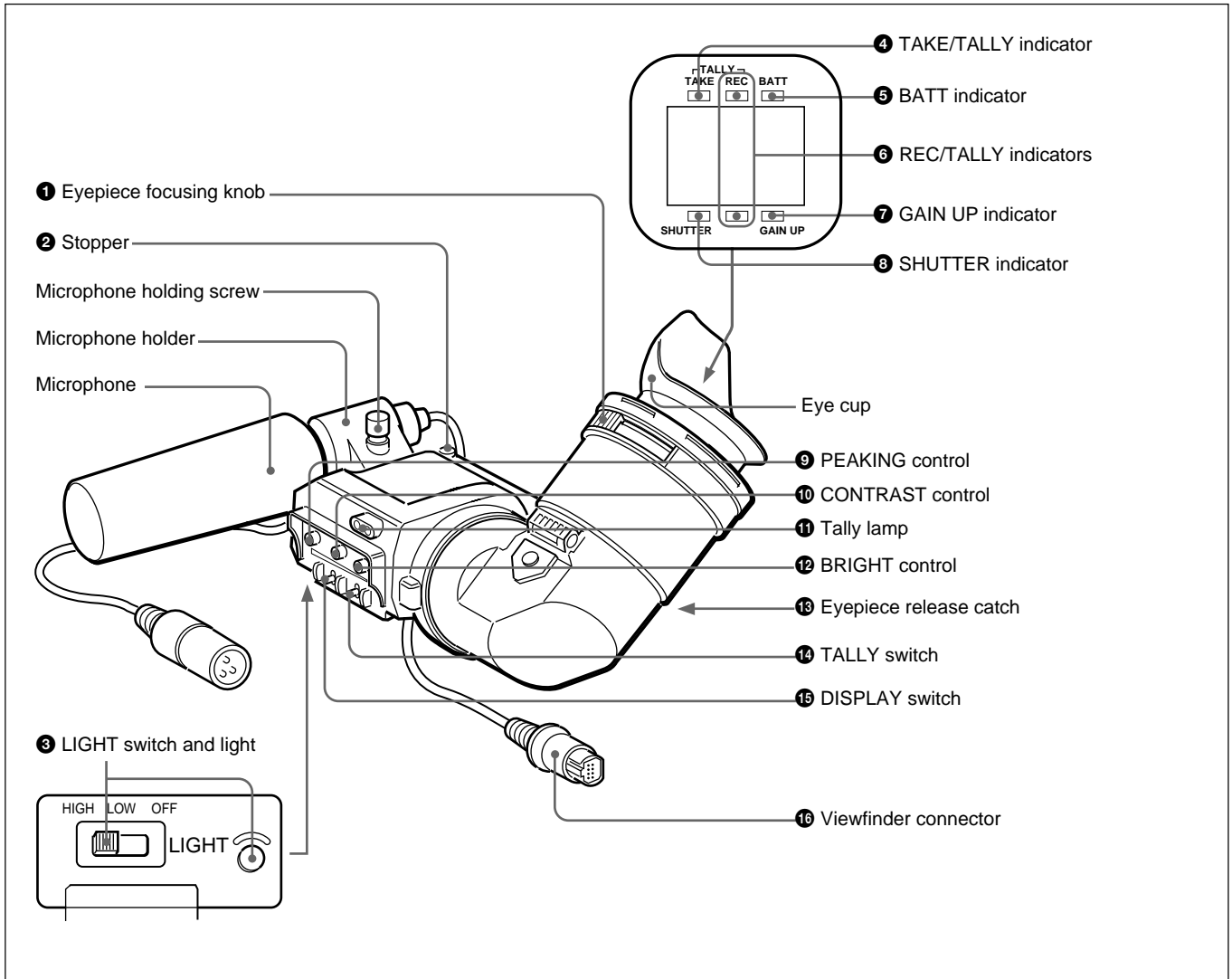
1) **E-E video signal:** “electric-to-electric” video signal. This is the input video signal which has passed through

internal electrical circuits, but has not been converted to a magnetic signal.

Location and Function of Parts

DXF-801/801CE Viewfinder

You can switch the scan size of the DXF-801/801CE in accordance with the aspect ratio selected on the camera or camcorder.



1 Eyepiece focusing knob

Turn this to adjust the viewfinder focus to match your eyesight. (See page 81.)

2 Stopper

Lift up when detaching the viewfinder (See page 31).

3 LIGHT switch and light

The light lights the lens and the switch controls the light as follows.

HIGH/LOW: Turn the light on and control the brightness.

OFF: Turns the lights off.

4 TAKE/TALLY indicator (orange)

This indicator functions as a green tally lamp when the CCU is connected with this camera.

5 BATT (battery) indicator (red)

This lights when the battery capacity is low.

⑥ REC/TALLY (recording/tally) indicators (red)

- This flashes from the time when you press the VTR button (**⑧** on page 15 and **⑨** on page 19) on the lens or camcorder until recording starts, then stays on continuously during recording.
- When using a camera control unit, this lights when the video from the camera is selected.
- This is also used to indicate a fault. (See page 89.)
- The lower indicator can be enabled by menu setting. (See page 61.)

⑦ GAIN UP indicator (orange)

This lights when the gain is 3 dB or more.

⑧ SHUTTER indicator (red)

This lights when the SHUTTER switch (**⑤** on page 15) is in the ON position.

⑨ PEAKING control

This adjusts the outline intensity of the viewfinder image. (See page 81.)

⑩ CONTRAST control

This adjusts the contrast of the viewfinder image. (See page 81.)

⑪ Tally lamp

When the TALLY switch **⑭** is in the ON position, this operates in the same way as the REC/TALLY indicators **⑥**.

⑫ BRIGHT (brightness) control

This adjusts the brightness of the viewfinder image. (See page 81.)

⑬ Eyepiece release catch

To view the viewfinder screen directly, press this catch, and hinge up the eyepiece.

⑭ TALLY switch

Set this switch to the ON position to use the tally lamp **⑪**.

⑮ DISPLAY switch

Set this switch to OFF when you want to remove the character data from the viewfinder and the monitor connected to the MONITOR OUT connector. However, items which are set to OFF on page 7 <VF DISPLAY1> and page 8 <VF DISPLAY2> of the OPERATION menu are not displayed even when this switch is set to ON.

Note

If CHARACTER is set to OFF on page 10 <MONITOR OUT> of the OPERATION menu, character data are not superimposed on the MONITOR OUT signal even if this switch is set to ON.

⑯ Viewfinder connector (20-pin)

Connect this to the VF connector (**②** on page 15).

Fitting and Connections

Before attaching/detaching peripheral equipment to/from the camera head, be sure to turn off the camera. Otherwise, the camera may not function properly.

Replacing the Lithium Battery

The camera head uses a lithium battery (CR2032) to retain date and time data.

When the lithium battery's voltage falls, the clock indication does not appear. Replace the lithium battery and set the clock (*see page 80*).

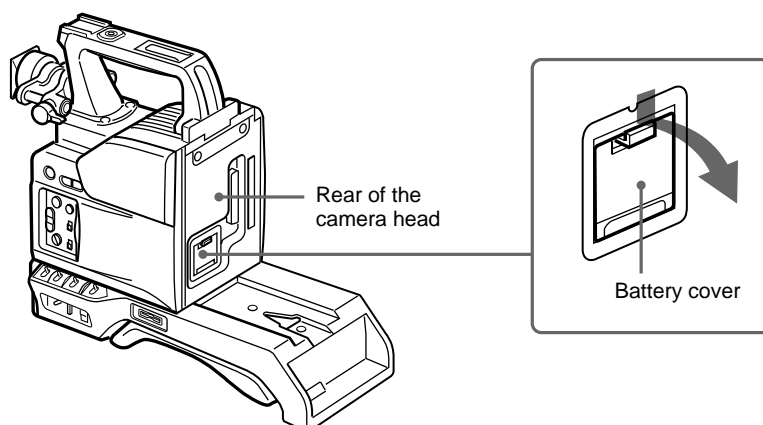
Notes

- Carefully read the instructions for replacing the lithium battery. **Lithium batteries may explode if misused.**
- Use only CR2032-type lithium batteries. Other types of lithium batteries may come loose when the camcorder is moved. If you have difficulty finding CR2032-type lithium batteries, contact your Sony dealer.

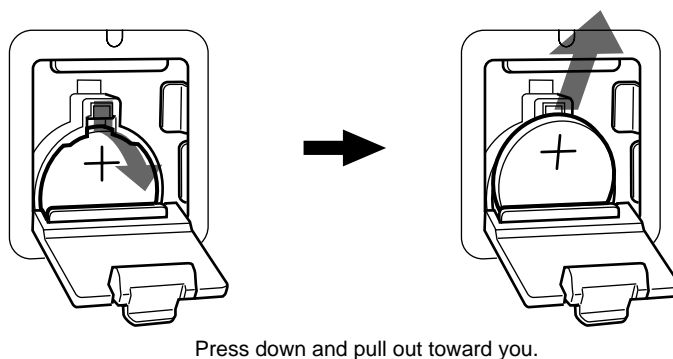
Replacing the Lithium Battery

- 1 Open the battery cover (on the rear of the camera head). Pull the catch of the cover toward you while pushing it downward.

For detaching the VTR or camera adaptor, see “Fitting a VTR” on the next page.

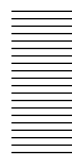


- 2 Take out the lithium battery.



- 3 Reverse step 2 to insert a replacement lithium battery. Make sure that the **+** symbol on the battery is facing you.

- 4 Close the battery cover.



Using the Camcorder Grip

When using the camera head with a VTR as a camcorder, you can replace the camera head's grip with a camcorder grip (not supplied). The type of

camcorder grip and the method for attaching it differ slightly depending on the type of VTR.

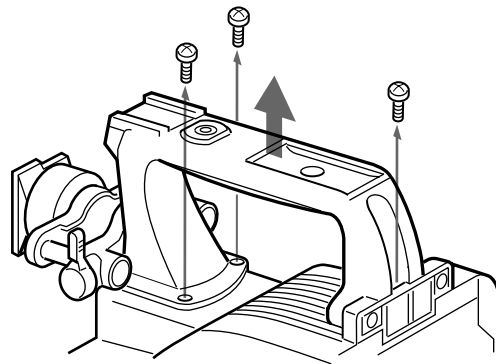
Attaching a camcorder grip to the DSR-1/1P

The CAC-H101 (optional) is required.

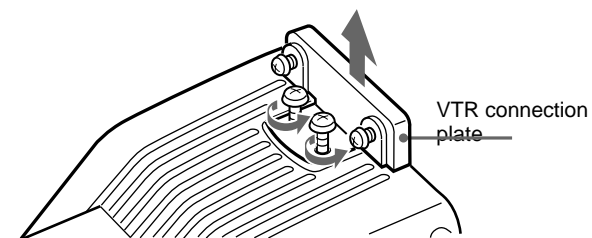
- 1 Adjust the viewfinder to the full-forward position.

For details, see "Adjusting the viewfinder position" on page 31.

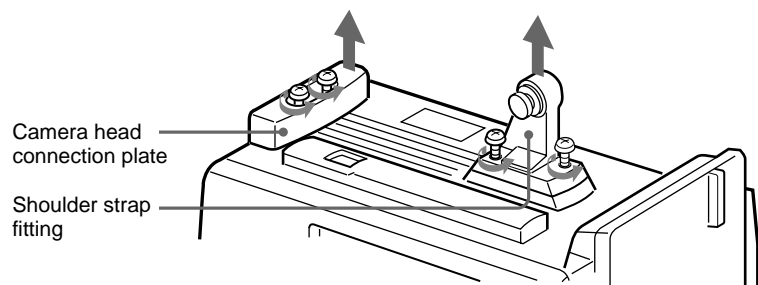
- 2 Remove the camera head grip's three screws, then pull up the grip to remove it.



- 3 Remove the VTR connection plate.

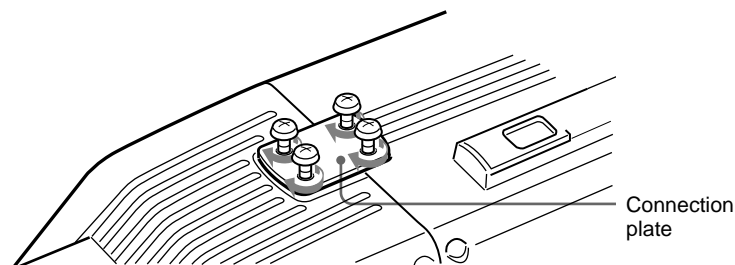


- 4 Remove the DSR-1/1P's shoulder strap fitting and the camera head connection plate.

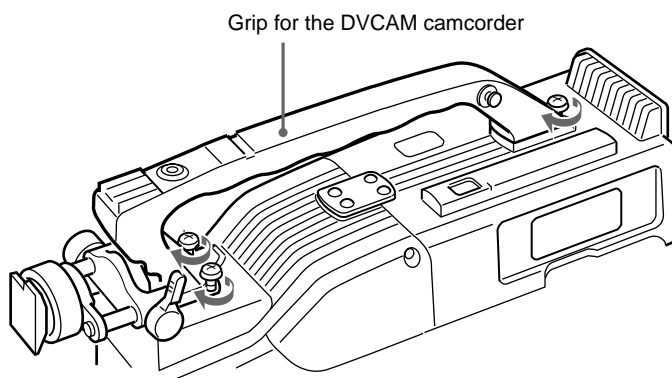


- 5** Perform the first three steps in “Fitting a VTR”.

- 6** Screw the connection plate (supplied with the grip for the DVCAM camcorder) which straddles the connection between the camera head and the DSR-1/1P. Also, tighten the two screws in the shoulder pad section. (See page 33.)



- 7** Screw the grip for the DVCAM camcorder.



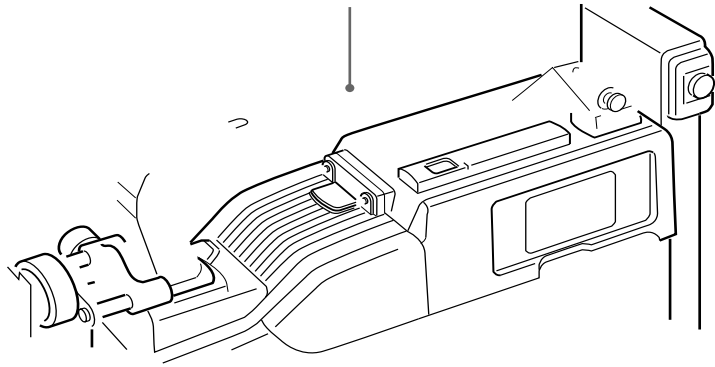
Attaching a camcorder grip to the PVV-3/3P

The CAC-H102 (optional) is required.

- 1** Perform steps **2** to **4** in “Fitting a VTR”.

- 2** Adjust the viewfinder to the full-forward position.

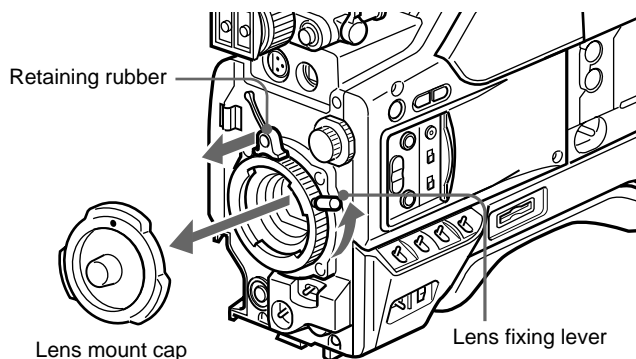
For details, see “Adjusting the viewfinder position” on page 31.



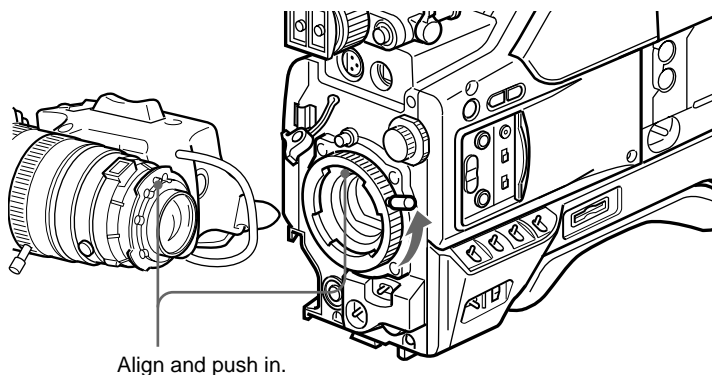
Fitting the Lens

In the case of the DXC-D50K/D50PK model, the lens is already fitted. In other cases, use the following procedure to fit the lens.

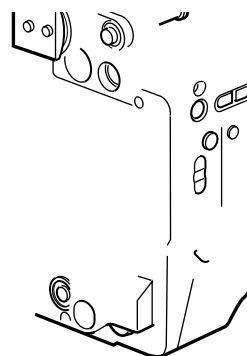
- 1 Remove the retaining rubber which prevents the lens mount from coming loose, then raise the lens fixing lever, and remove the lens mount cap.



- 2 With the lens fixing lever turned fully counterclockwise, push in the lens, aligning the projection on the lens with the cutout on the camera.

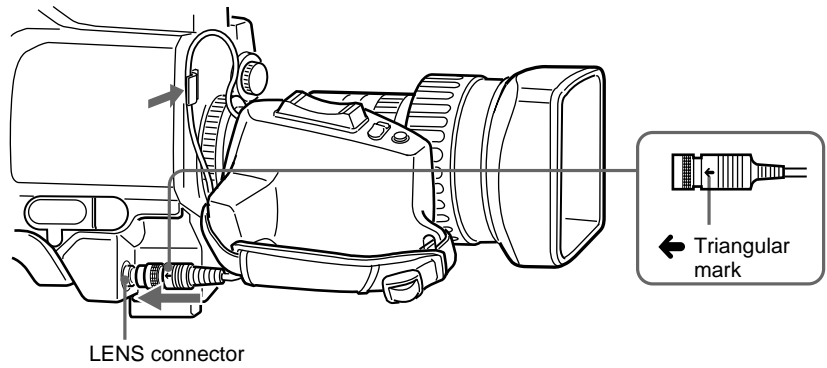


- 3 Supporting the lens, turn the lens fixing lever fully clockwise. Replace the retaining rubber on the lens mount.



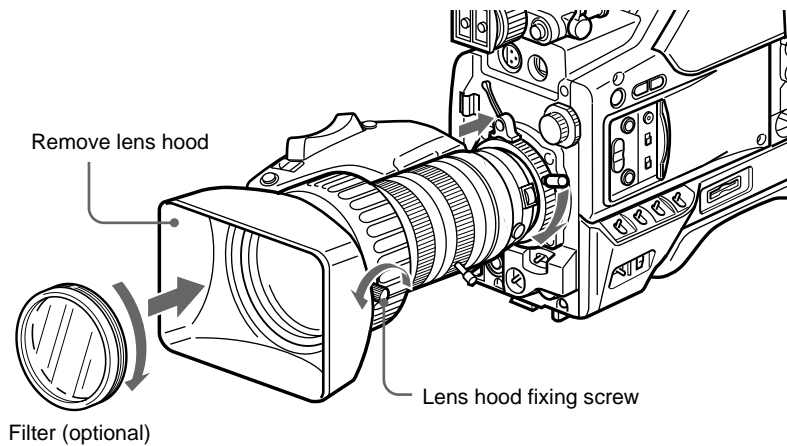
Fitting the Lens

- 4** Using the triangular mark as a guide, push the lens connector into the LENS connector on the camera head, until it clicks into place. Fasten the cable with the clamps.



Fitting optional filters

Loosen the lens hood fixing screw to remove the lens hood, then attach the filter.



Using the Viewfinder

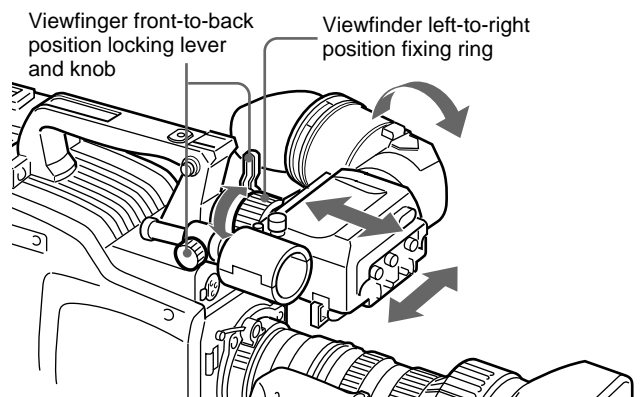
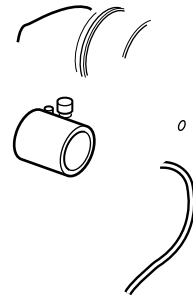
Removing the Viewfinder

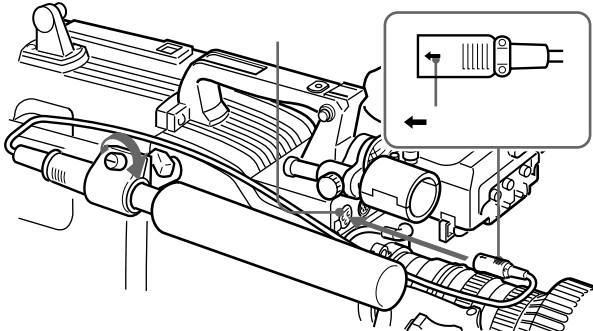
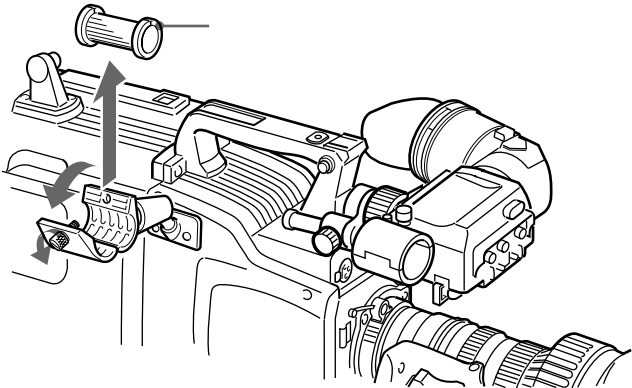
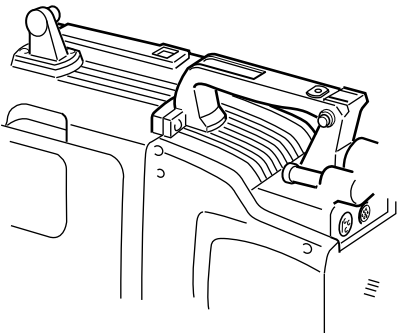
Remove any microphone from the viewfinder before beginning.

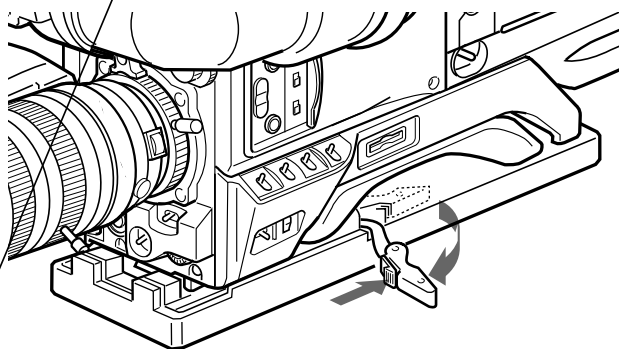
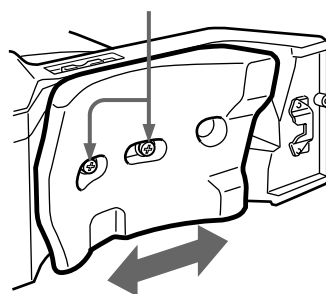
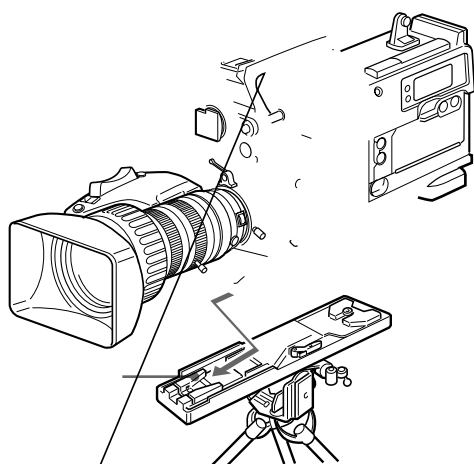
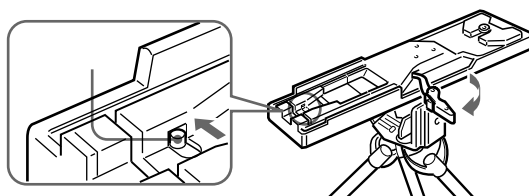
- 1 Pull the viewfinder connector out of the VF connector on the front of the camera head.

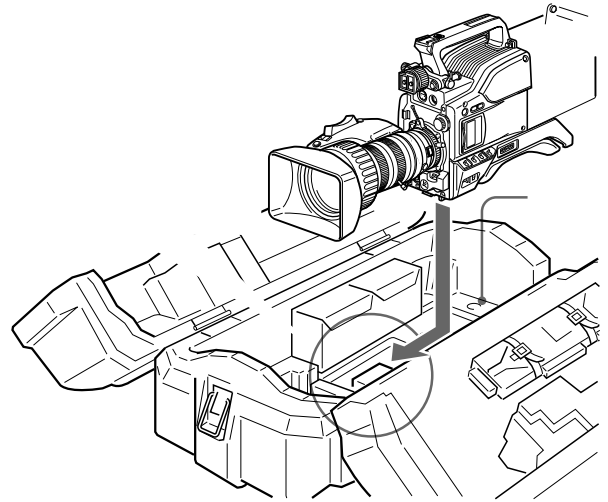
VF connector

- 2 Loosen the viewfinder left-to-right position fixing ring, then pulling up the retaining catch, slide the viewfinder out.









Connecting a Portable VTR

Using the optional CA-D50/D50P Camera Adaptor and a camera cable, you can connect a portable VTR. Set the VTR selector switch on the camera adaptor according to the VTR connected.

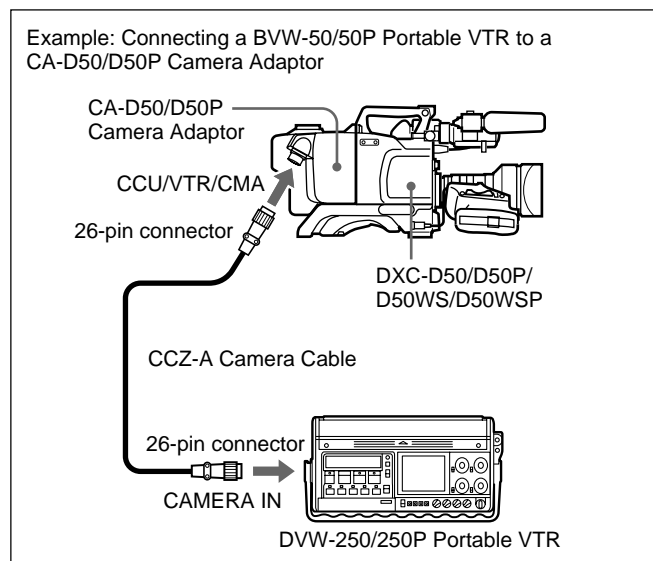
If using a VTR from another manufacturer, consult your Sony dealer.

Checks before making connections

Check first that the video camera, camera adaptor, VTR, and other devices are all powered off.

Making connections

Using a camera cable, connect the CCU/VTR/CMA connector on the camera adaptor to the camera input connector of the VTR.



Camera cable

- Select a camera cable to fit the camera connector on the VTR you are using.
- The maximum camera cable extent is 10 m (33 ft).

For details, consult your Sony dealer.

Video monitor

- If using an S-VHS VTR, using a video monitor with an S-video input connector and connecting it to the S-video connector of the VTR will allow you to monitor a clear picture, with no flecking.
- The output video signal from the VIDEO OUT connector of this unit is a composite video signal. Connect the VIDEO OUT connector of this unit to a composite video signal input connector of the monitor.

Connecting a Number of Cameras (Using a Camera Control Unit)

When using a number of cameras in the studio, it may be necessary to use a CCU-D50/D50P/TX50/TX50P Camera Control Unit to provide video and color sync between cameras, and special effects and other devices to allow switching, wipes and so forth.

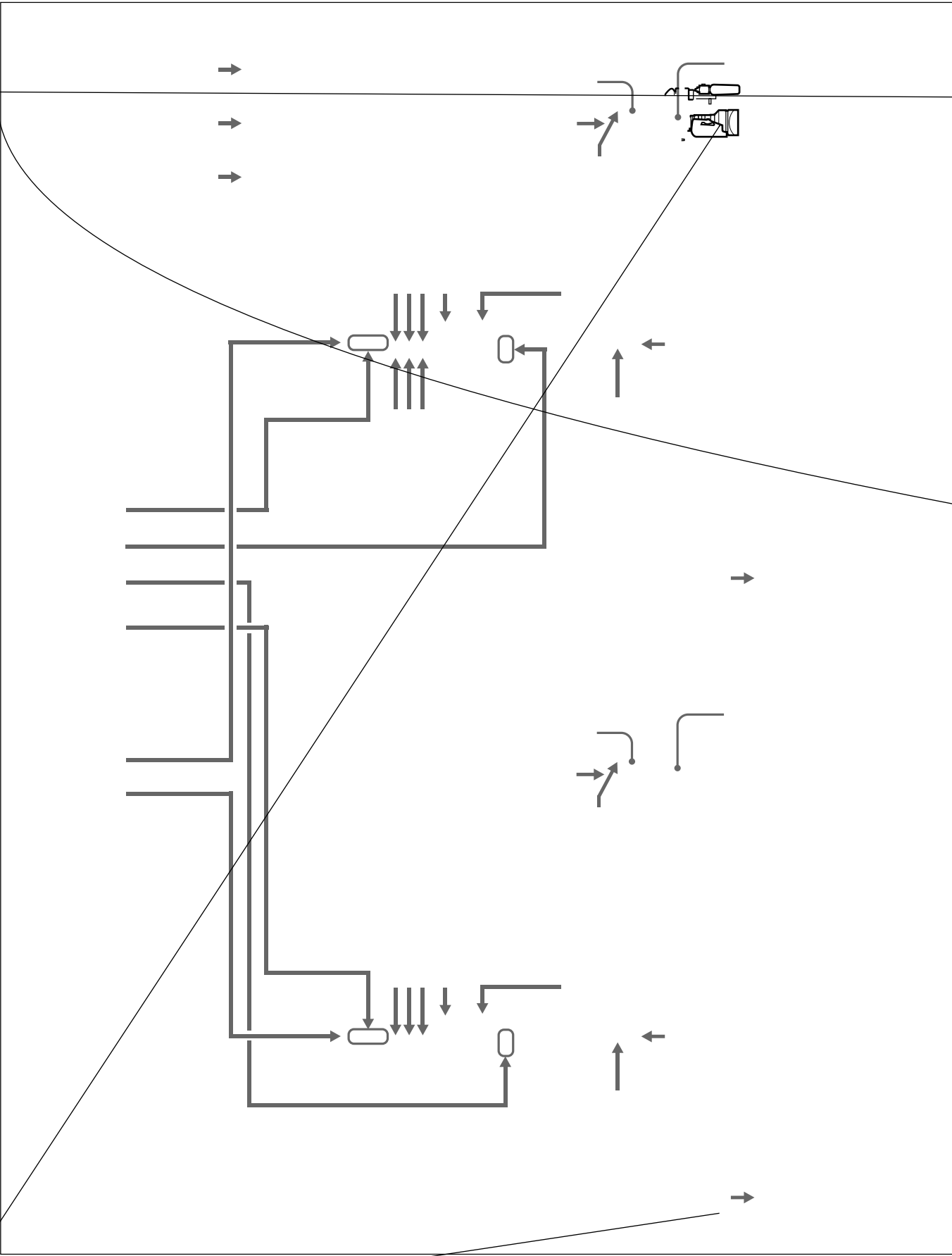
In the studio it may also be convenient to use a DXF-51 Viewfinder.

The figure below shows an example studio configuration.

For details, consult your Sony dealer.

Notes

- When using the CCU-TX50/TX50P Camera Control Unit, use the PRO 76 PIN (DIGITAL) connector of the CA-TX50/TX50P Camera Adaptor.
- Before connection, be sure to turn off the camera and its peripheral equipment.



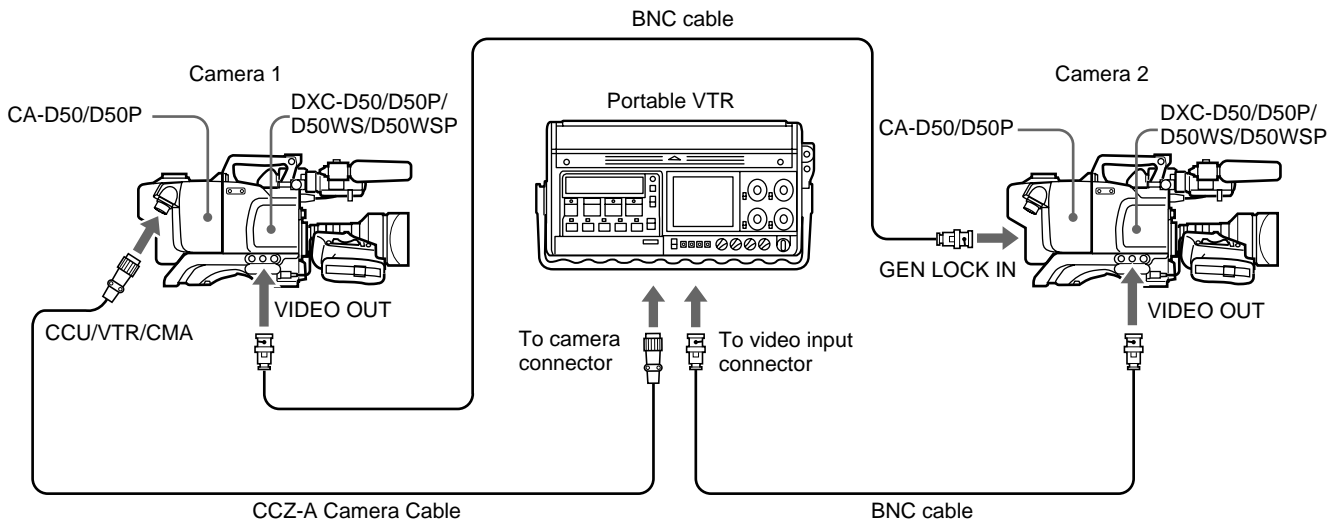
Connecting a Number of Cameras (Without Using a Camera Control Unit)

When using two or more synchronized cameras without a camera control unit, connect an external sync signal to the GEN LOCK IN connector on the camera adaptor (CA-D50/D50P etc.), supplying a VBS or BS

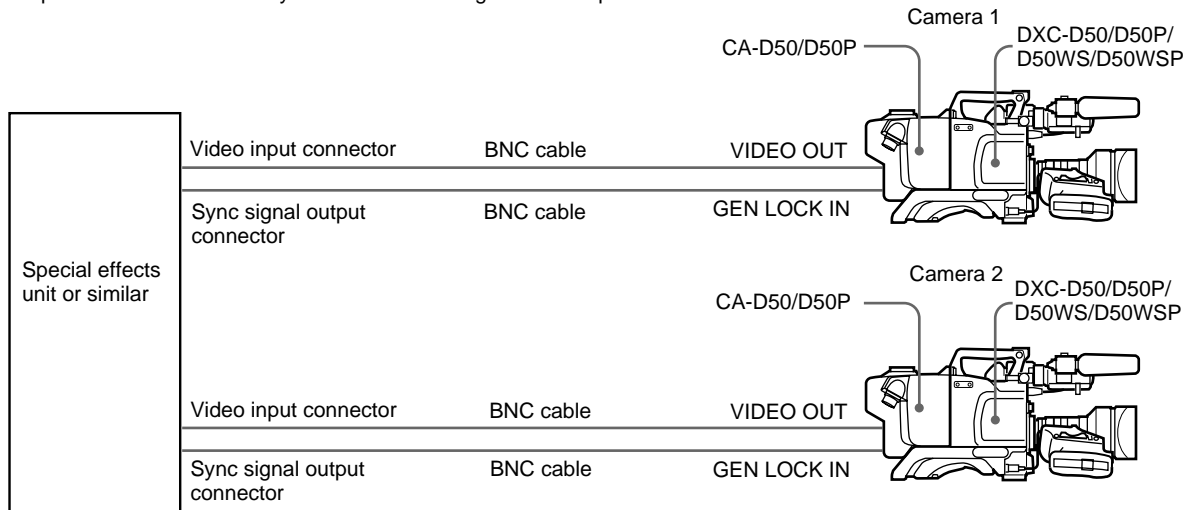
signal. The camera will then operate synchronized to this signal.

You can adjust the synchronization using the MAINTENANCE menus. (See page 66.)

Example 1: Camera 2 synchronized to the signal from camera 1



Example 2: Cameras 1 and 2 synchronized to the signal from a special effects unit or similar



This unit operates on either a battery pack or an AC supply (using the optional CMA-8A/8ACE AC Adaptor).

For details of the power supplies which can be used, refer to the documentation supplied with the VTR connected to this unit or the camera adaptor.

Using an Anton Bauer Intelligent Battery System and Ultralight System

Fitting the special battery mount made by Anton Bauer Corporation to this unit allows you to use their Intelligent Battery System and Ultralight System.

For details, consult your Anton Bauer products supplier or Sony dealer.

Using Battery Packs

Always fully charge a battery pack before using it.

Notes

- Be careful that other metal objects do not come in contact with the metal parts of the battery pack, as this could cause a short.
- Do not leave the battery pack in the camera if it is not going to be used for a long time.
- If the battery pack is recharged after use while still hot, it may not be possible to obtain a full charge.

Battery pack operating times

The following table shows approximate continuous operating times, when operating the camera and 1.5-type viewfinder at normal temperatures, with a camera adaptor and the DSR-1/1P or PVV-3/3P connected.

Battery pack	Continuous operating time
NP-1B ^{a)}	about 55 minutes
BP-90A ^{b)}	about 115 minutes
BP-L40A ^{c)}	about 70 minutes
BP-M50 ^{c)}	about 90 minutes
BP-IL75 ^{c)}	about 140 minutes
BP-M100 ^{c)}	about 200 minutes
BP-GL65 ^{c)}	about 120 minutes
BP-GL95 ^{c)}	about 200 minutes

- a) Requires the dedicated DC-L1 Battery Case when the DSR-1/1P is attached.
- b) Requires the dedicated DL-L90 Battery Case when the DSR-1/1P is attached, or the dedicated DC-500 Battery Case when the PVV-3/3P is attached.
- c) Requires the dedicated BKW-L601 Battery Case when the PVV-3/3P is attached.

Battery low indications

When the voltage of the supply to the camera head lowers to or below 11.0 V, LOW BATT appears in the viewfinder. At this time, the BATT indicator in the viewfinder flashes when operating with the DSR-1/1P or PVV-3/3P.

If you continue using the camera head, the BATT indicator lights up.

When the battery pack is low, replace it with a fully-charged battery pack.

Battery pack charging

Before using a battery pack, charge it as shown in the following table.

For details of battery charger operation, refer to the instructions provided with the battery charger to be used.

Battery pack	Battery charger
NP-1B	BC-1WD/1WDCE, BC-410/410CE
BP-90A	BC-410/410CE
BP-M50, BP-M100, BP-IL75, BP-L40A	BC-M50/M100/M100CE/M150

Notes

- A warm battery pack may not be able to be fully recharged.
- Even when fully charged, battery packs gradually lose their charge naturally. Use the battery packs as soon as possible after recharging.
- To prolong the life of battery packs, store them in a cool place (about 20°C (68°F)), and charge in a place with an ambient temperature between 10°C and 30°C (50°F and 86°F).
- At low temperatures, the usable time of battery packs decreases. The usable time of battery packs increases if they are warmed to the room temperature (about 20°C (68°F)) before use at low temperatures.
- Compared to the BP-L40A, the BP-IL75 offers better performance at low temperature. The BP-IL75 is recommended for use at low temperature.
- Carrying a spare battery pack is recommended.

The BP-GL65, BP-GL95, BP-L40A, and BP-IL75 are free from memory effect. There is no need to discharge it fully before recharging.

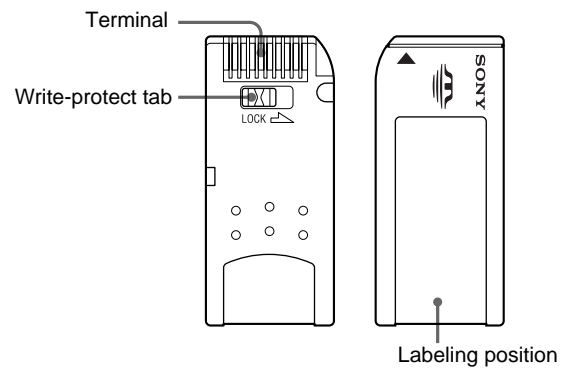
Camera Adaptor Power Supply

The camera adaptor automatically operates on power supplied to the CCU/VTR/CMA connector from the portable VTR, CCU-D50/D50P Camera Control Unit, CMA-8A/8ACE AC Adaptor or other connected device.

Note

Before use, check that the device connected to the CCU/VTR/CMA connector is able to provide the power required by the camera.

If it is not able to provide the necessary power, or when it is necessary to prolong the operating time, use the camera with a separate power supply.



- Do not bend, drop, or apply strong shock to a **Memory Stick**.
- Do not disassemble or modify a **Memory Stick**.
- Do not let the **Memory Stick** get wet.
- Do not use or keep a **Memory Stick** in locations that are:
 - Extremely hot such as in a car parked in the sun
 - Under direct sunlight
 - Very humid or subject to corrosive gases
- When you carry or store a **Memory Stick**, keep it in its case.

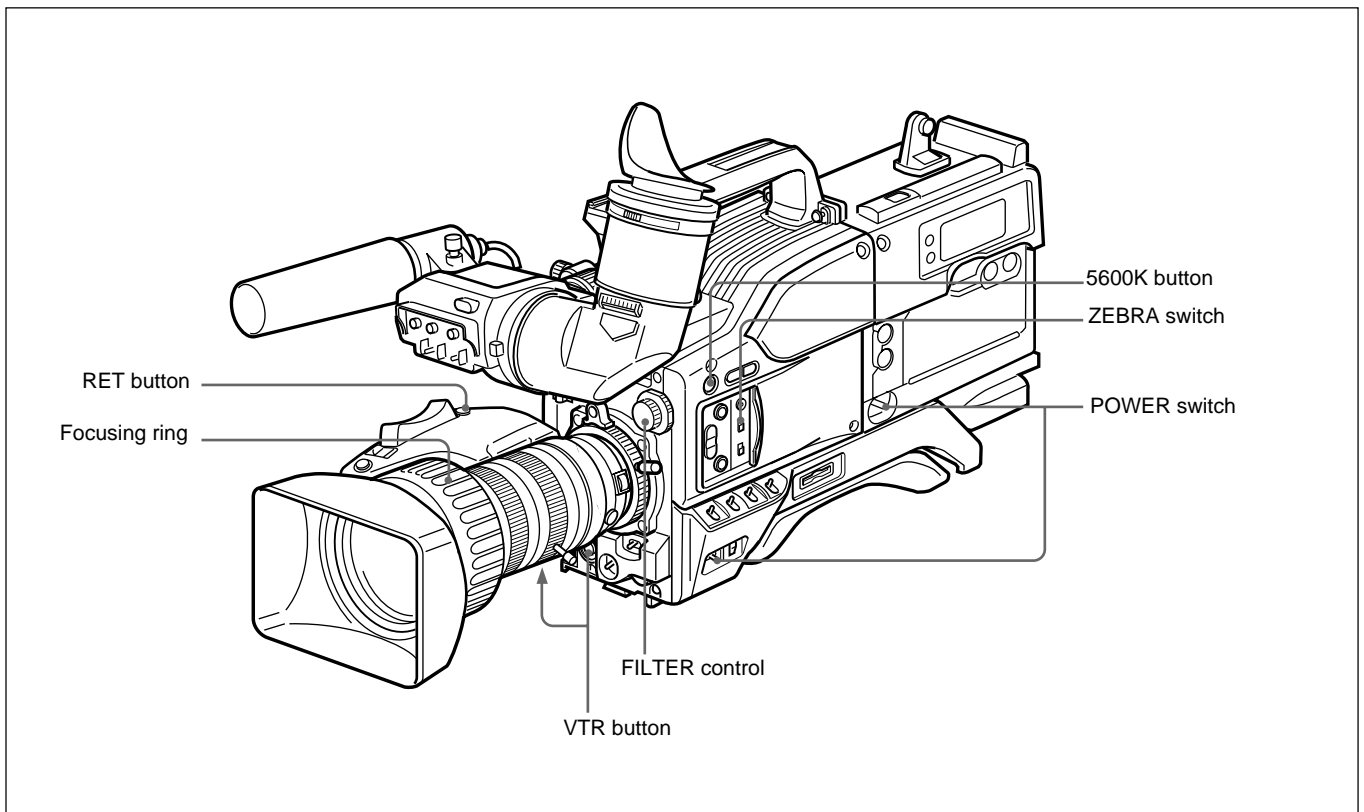
Access lamp

If the access lamp is lit or flashing, data are being read from or written to the **Memory Stick**. Do not shake the camera or subject it to shock. Do not turn off the power of the camera or remove the **Memory Stick**. This may damage the data.

- **Memory Stick** and  are the trademarks of Sony Corporation.
- MagicGate **Memory Stick** and **MAGIC GATE** are the trademarks of Sony Corporation.

Shooting

Basic Procedure for Shooting



1 Attach the VTR or camera adaptor to the camera head, then turn each device's power on.

2 Set the FILTER control and the 5600K button appropriately for the lighting conditions.

(continued)

Basic Procedure for Shooting

FILTER control settings

Filter setting	Lighting conditions
1 (CLEAR)	Indoor shooting
2 (1/4 ND)	Outdoor in cloudy or rainy day. Indoor shooting and you wish to reduce the depth of field ¹⁾ .
3 (1/6 ND)	Outdoor shooting in daytime
4 (1/64ND)	Outdoor shooting and you wish to reduce the depth of field, or especially bright outdoor ambient light

From the viewpoint of the characteristics of lenses, shooting with the aperture set in the range of f-4 to f-8 is generally recommended for good quality pictures. Set the FILTER control to bring the aperture setting into that range. However, this may not apply when special composition is desired.

Setting of the 5600K button

5600K button	Example of lighting conditions
OFF (not lit)	Indoor shooting under lighting with lower color temperature, such as a halogen or tungsten lamp.
ON (lit)	Outdoor shooting in daytime, or indoor shooting under lighting with higher color temperature

- 3** Check the switch settings on the camera head.
(See pages 12 to 17.)
If there is not sufficient time to check the camera settings, you can use “easy mode” by pressing the EZ MODE button to turn the “easy mode” function on. The camera is automatically adjusted to standard settings, and the iris and the white balance are adjusted automatically.
- 4** Check the settings in the OPERATION menu (page 60) and PAINT menu (page 63).
- 5** Check the lens settings (page 83) and flange focal length adjustment (page 82).
- 6** Adjust the eyepiece focus, and the contrast and brightness of the viewfinder image (page 81).
- 7** Check the sound system settings.
 - Microphone connections
 - Settings on the VTR (refer to the VTR instructions)

1) **Depth of field:** This is the range over which the subject is sharply in focus.

- 8** If required, switch on the center marker and/or safety zone (OPERATION menu page 5) and zebra pattern (ZEBRA switch) in the viewfinder image.
- 9** Adjust the white balance (page 73) and black balance (page 77).
- 10** Turn the focusing ring so that the subject is sharply in focus.
It may be convenient to use the EZ FOCUS button for the “easy focus” function (see page 13).
- 11** Set up the VTR according to your shooting objectives, then start recording.
If a camera control unit is not connected: Press the VTR button on the camera head or on the lens.
If a camera control unit is connected: Press the VTR’s record button to begin recording.

For details of VTR setup and operations, see your VTR’s operating instructions.

- During recording, the REC/TALLY indicator(s) in the viewfinder light(s), and “REC” appears on the viewfinder screen.
- When recording on the DSR-1/1P, you can use the AUDIO LEVEL knob on the front of the camera head to manually adjust the channel 1 audio level. To do this, you must first set up the DSR-1/1P to enable manual adjustment of the audio recording level.

For details of this operation, see the operating instructions for the DSR-1/1P.

- 12** To pause recording, press the VTR button again.

Reviewing the recording

It is possible to review the last few seconds of the recording on the tape (recording review).

Press the VTR button to pause recording, then press the RET button on the lens.

Depending on how long the button is pressed, the tape is automatically rewound over the last two to ten seconds from the paused position, and then this part is played back in the viewfinder. If the RET button is kept pressing, about ten seconds of the recording review is possible.

The VTR then returns to the paused state.



This function may not be provided by some VTRs. Refer to the instructions for the VTR.

Shooting with the DSR-1/1P

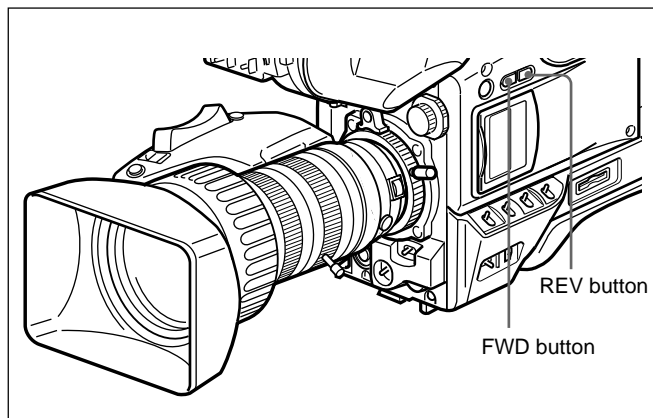
The DXC-D50/D50P/D50WS/D50WSP docks with the DSR-1/1P to configure a DVCAM digital camcorder.

The following describes how to shoot using a DVCAM digital camcorder.

Using the Edit Search Function While Back Space Editing

While the DSR-1/1P is in recording pause mode, press and hold the EDIT SEARCH buttons to activate the search playback function for as long as you hold down the button. You can use the edit search function to find the desired tape location after a recording stop during back space editing or when continuing to record from any other location on the tape.

- 1 Dock the DSR-1/1P to the camera head and turn on the power, then insert a cassette into the DSR-1/1P.
- 2 Perform steps 2 to 12 in “Basic Procedure for Shooting” (page 43).
- 3 Press and hold either of the EDIT SEARCH buttons (REV or FWD).



The tape is moved in reverse or forward search mode for as long as you hold down the REV or FWD button, and the image is shown in the viewfinder.

To change the playback speed

Press the REV or FWD button down firmly into the inner position to make the tape move at the faster speed. Press the button down lightly to make the tape move at the slower speed.

Do not shut off the camera head's power while using the edit search function. The DSR-1/1P may not be able to find the continue point.

- 4 Release the REV or FWD button when you find the tape location where you wish to continue shooting.

The DSR-1/1P enters recording pause mode.

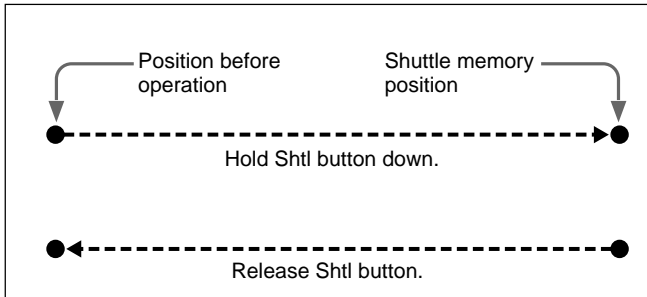
- 5 Press the VTR button on the camera head or the lens.

The DSR-1/1P starts recording.

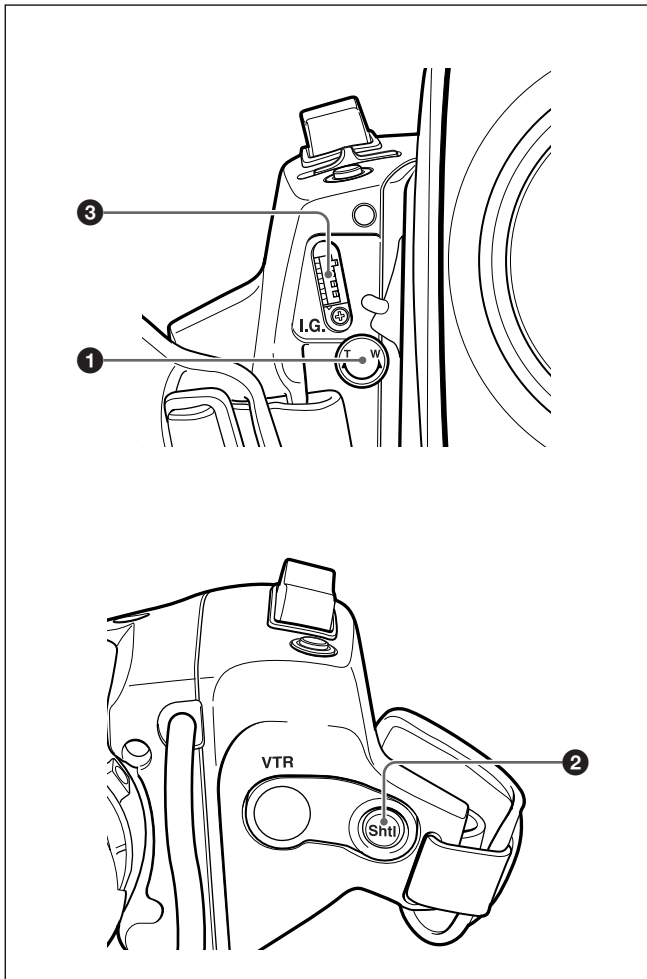
Shuttle shot function

What is the shuttle shot function?

The shuttle shot function allows you to zoom at maximum speed to a preset position (shuttle memory position) simply by pressing the lens Shtl button. When you release the Shtl button, the lens returns to the original position.




To set the shuttle memory position



While pressing the Shtl button, rotate the shuttle memory position knob **1** to set the zoom position. Rotate the knob to the T side to move in the telephoto direction, and rotate to the W side to move in the wide-angle direction.

To zoom to the preset shuttle memory position

Press the Shtl button and keep it held down. The lens zooms to the preset position and stops. When you release the Shtl button, the lens returns to the position it was in before the operation.

 The motorized zoom lever does not function while the Shtl button **2** is held down.

DIP switch settings

The DIP switches **3** on the VCL-919BY zoom lens are used to make shuttle shot settings.

By DIP switch settings, the shuttle shot function can be assigned to the VTR button and the RET button.

Purpose		DIP switch setting (number: position)
Turn shuttle shot function on or off	Turn on	1: ON
	Turn off	1: OFF
Assign shuttle shot function to VTR button	Turn VTR control function on	2: OFF
	Turn shuttle shot function on	2: ON
Assign shuttle shot function to RET button	Turn return video display function on	3: OFF
	Turn shuttle shot function on	3: ON

DIP switch 4 is reserved. It is not used currently.

Viewfinder Screen Indications and Menus

Viewfinder Screen Indications

There are four types of indication screen which appear in the viewfinder and the video monitor connected to the MONITOR OUT connector, as follows.

- **Normal indications**

These show the operating state of the camera and connected VTR. (See page 52.)

- **Status indications**

Pressing the MENU switch to the OFF/STATUS side while the normal indications are present calls a display of current settings. (See page 51.)

- **USER menu**

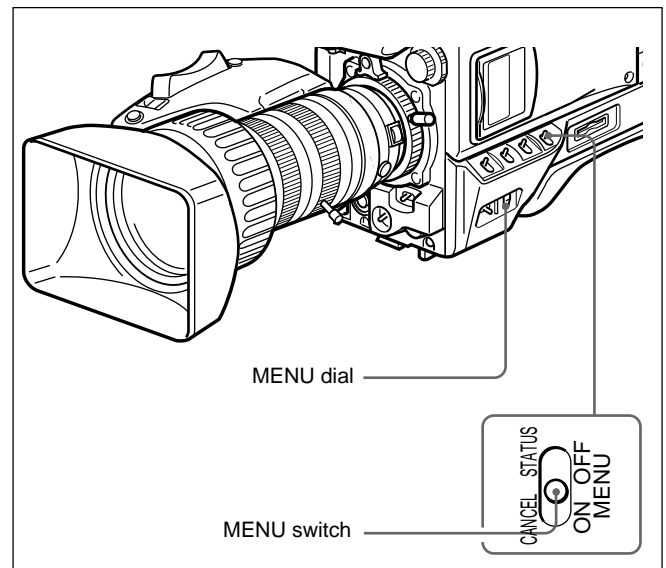
These provide settings for the lens aperture, shutter speed, and so forth. (See page 51.)

- **TOP MENU**

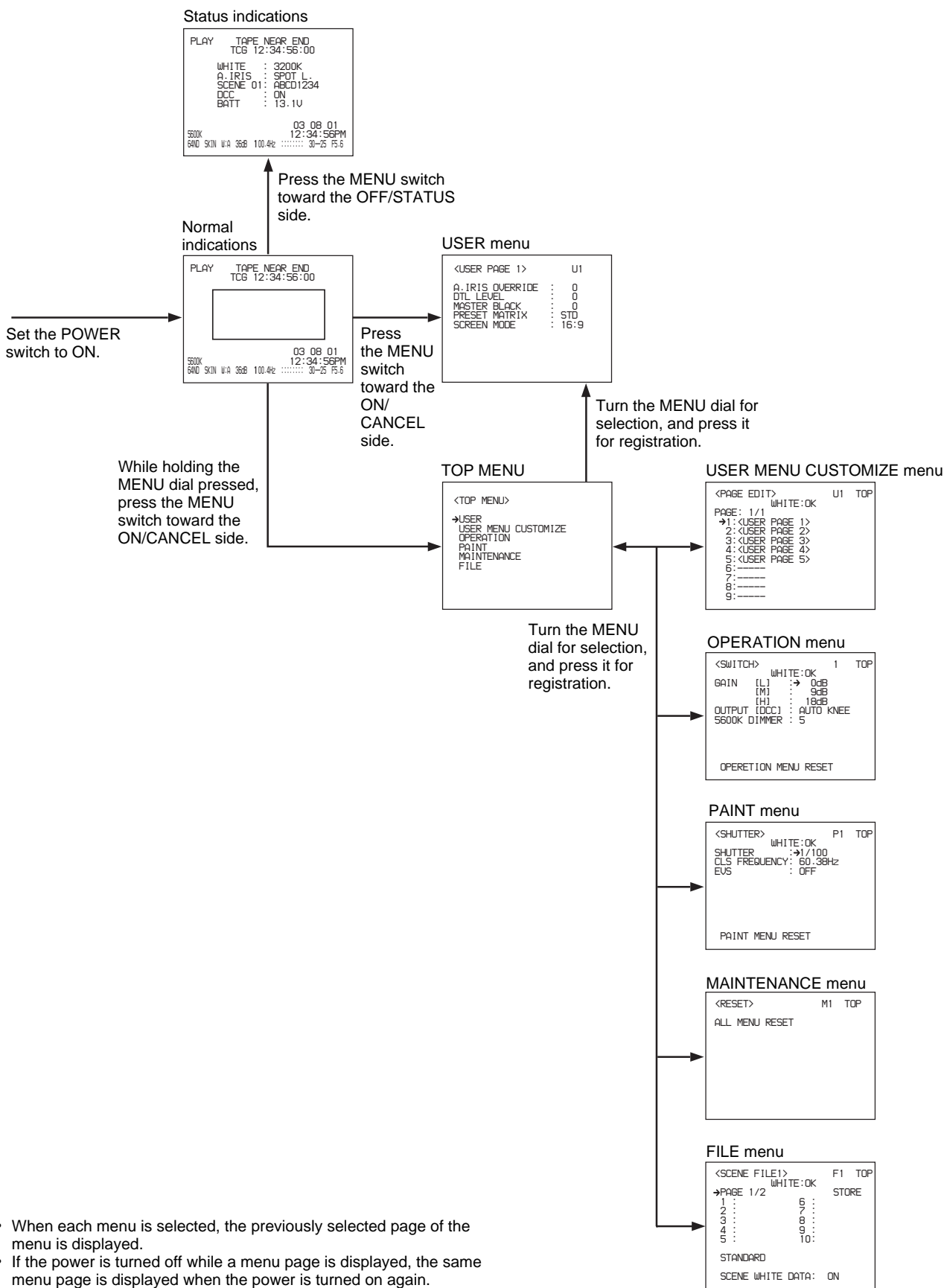
This menu is used for user's menu customization, picture quality settings, and storing/retrieving data to/from a Memory Stick. (See page 55.)

Changing the Viewfinder Display

Use the MENU switch and MENU dial shown in the following figure to switch the viewfinder display among the normal indications, USER menu pages and TOP MENU.



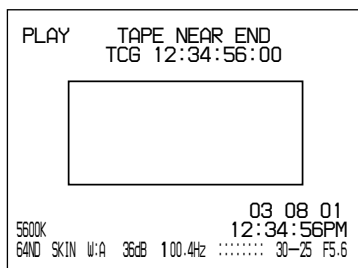
Viewfinder Screen Indications



- When each menu is selected, the previously selected page of the menu is displayed.
- If the power is turned off while a menu page is displayed, the same menu page is displayed when the power is turned on again.

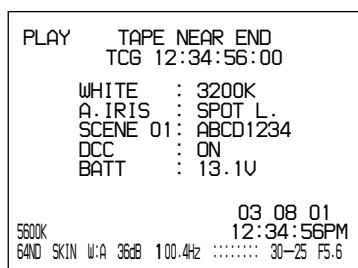
Displaying the normal indications

To display the normal indications, set the POWER switch to the ON position.



Displaying the Status indications

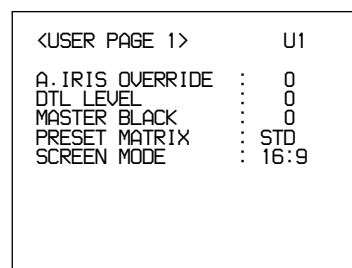
While the normal indications are displayed, press the MENU switch toward the OFF/STATUS side. The current settings are displayed.



Indication	Content
WHITE	Color temperature during the white balance adjustment
A. IRIS	Aperture adjustment method (STD/SPOT L./BACK L.)
SCENE	Number and filename of the selected scene file
DCC	ON/OFF of DCC while DCC is selected in the menu setting, or ON/OFF of ADAPTIVE while ADAPTIVE is selected in the menu setting
BATT	Power voltage indication

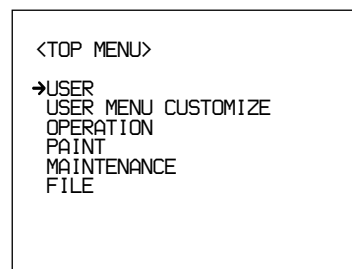
Displaying the USER menu

While the normal indications are displayed, press the MENU switch toward the ON/CANCEL side. The USER menu is displayed. On the USER menu, basic camera settings and selection of scene files can be performed.



Displaying the TOP MENU

While the normal indications are displayed, while holding the MENU dial pressed, press the MENU switch toward the ON/CANCEL side. The TOP MENU is displayed. From the TOP MENU, you can proceed to each menu for advanced settings for the camera, user's menu customization, and storing/retrieving data to/from a Memory Stick.



To reinitialize all settings on the menus to their factory defaults

- 1 Select MAINTENANCE from the TOP MENU.
- 2 Display page M1.
For details, see "Displaying your desired menu page" on page 55.
- 3 Move the cursor to ALL MENU RESET and press the MENU dial.

The indication changes to "RESET OK?".

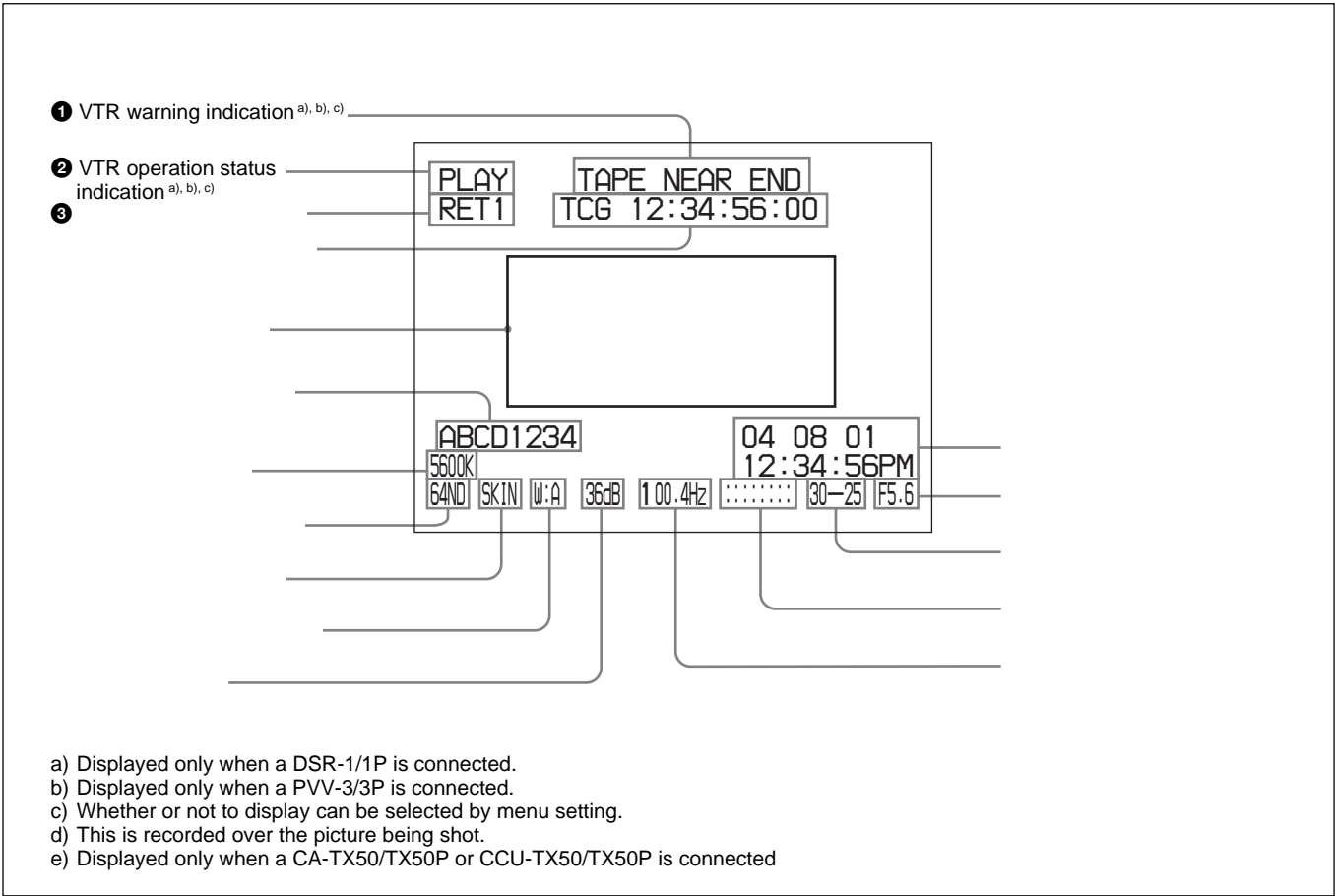
- 4 Press the MENU dial again.

The indication changes to "ALL MENU RESET," and reinitialization completes.

To cancel reinitialization, press the MENU switch toward the ON/CANCEL side.

Viewfinder Normal Indications

During normal operation, the following items can be indicated in the viewfinder.

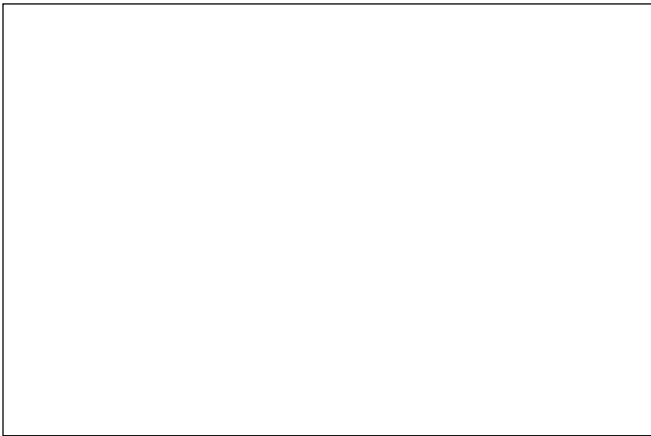


The significance of each of the indications shown in the figure is as follows.

1 VTR warning indication

This shows warning indications about operation or status of the connected VTR.

When connecting the DSR-1/1P or PVV-3/3P



OXIDE TAPE
(PVV-3/3P only)

- a) Even if a VTR is not connected, LOW BATT is displayed when the voltage of the power supply to the camera head fall to or below 11.0 V.

Only when connecting the DSR-1/1P

Indication	Meaning
MP TAPE	An incorrect type of cassette has been loaded. (The cassette is automatically ejected and the indication disappears in about two seconds.)
AUDIO 48kHz? (4 flashes/s)	At back space editing, audio recording mode has changed from 32 kHz mode (4-channel mode) to 48 kHz mode (2-channel mode).
AUDIO 32kHz? (4 flashes/s)	At back space editing, audio recording mode has changed from 48 kHz mode (2-channel mode) to 32 kHz mode (4-channel mode).
ERROR:91-13F	Failure in loading or saving the cassette memory data. When other error indication appears, refer to the operating instructions for the DSR-1/1P.

② VTR operation status indication

This indicates the VTR's current operation status (REC, PLAY, etc.).

③ Return video indication

RET1, RET2, or RET3 indicates pressing the return video button on the CA-TX50/50P when the CA-TX50/50P and CCU-TX50/50P are connected.

④ Time data indication

Time data from the VTR depending on the DISPLAY switch settings on the VTR are displayed as shown in the following table.

DISPLAY switch setting	Time data displayed
COUNTER	CNT: Tape transport time
TC	TCG: a time code data from the time code generator TCR: a time code data from the time code reader
U-BIT	UBG: a user bit data from the user bit generator

When using the DSR-1/1P, time data appear during playback, fast forward, rewind, or recording review.

⑤ Status display area

One of the following values or messages is displayed to indicate the camera head's current status or its operation status.

- New values when changing camera head's settings
- Messages indicating progress or results of adjustments
- The camera head's current settings (See "Displaying the Status indications" on page 51.)

⑥ Camera ID indication

The camera ID is displayed while the camera is in Color Bar mode.

⑦ 5600K indication

This is displayed when the 5600K button is pressed.

⑧ Filter setting indication

This shows the setting of the FILTER control.

Indication	FILTER control setting
CLEAR	1 (CLEAR)
4ND	2 ($\frac{1}{4}$ ND)
16ND	3 ($\frac{1}{16}$ ND)
64ND	4 ($\frac{1}{64}$ ND)

⑨ SKIN DTL indication

This appears when the skin detail function is activated. (See page 64.)

⑩ White balance indication

The following indications appear.

Indication	Meaning
EZ	Operating in EZ mode (The ATW function is selected.)
ATW	The ATW function is selected. (The ATW button was pressed and the indicator is lit.)
W:A	White balance memory A is selected.
W:B	White balance memory B is selected.
W:P	Preset white balance is selected.
W:M	Manual adjustment is performed remotely.

⑪ Gain indication

This shows the gain value.

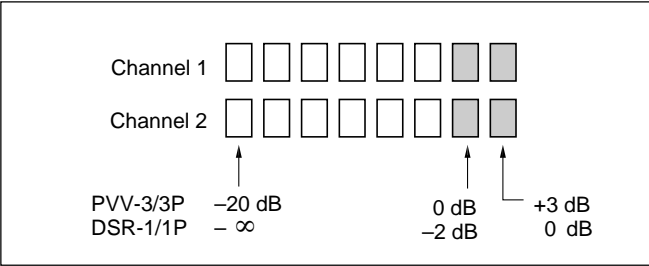
⑫ Shutter setting indication

When the SHUTTER switch is set to ON, the shutter speed or CLS frequency set on page 1 <SHUTTER> of the PAINT menu is displayed here. You can select the shutter speed or the CLS frequency with the SHUTTER switch.

Viewfinder Normal Indications

13 Audio recording level indicators

These show the recording levels of audio channels 1 and 2 on the VTR.



14 Tape remaining indication

This shows the tape remaining in the VTR as follows.

Indication	Tape remaining
F-30	At least 30 minutes
30-25	25 - 30 minutes
25-20	20 - 25 minutes
20-15	15 - 20 minutes
15-10	10 - 15 minutes
10-5	5 - 10 minutes
5-0	2 - 5 minutes
5-0 (flashing)	0 - 2 minutes

15 Lens f-stop indication

This shows the f-stop of the lens.

Note

Depending on the lens being used, this indication may differ slightly from the actual f-stop on the lens.

16 Clock indication

The clock indication is shown in one of the following ways (according to the CLOCK IND setting on page M3 of the MAINTENANCE menu).

CAM: Always displayed.

BARS: Displayed whenever color bars are displayed.

OFF: Not displayed.

If the clock indication is displayed during recording, it is superimposed on the image.

Note

If the charge of the lithium battery inside the camera head is exhausted, the clock indication cannot be displayed. Replace the lithium battery and set the clock again.

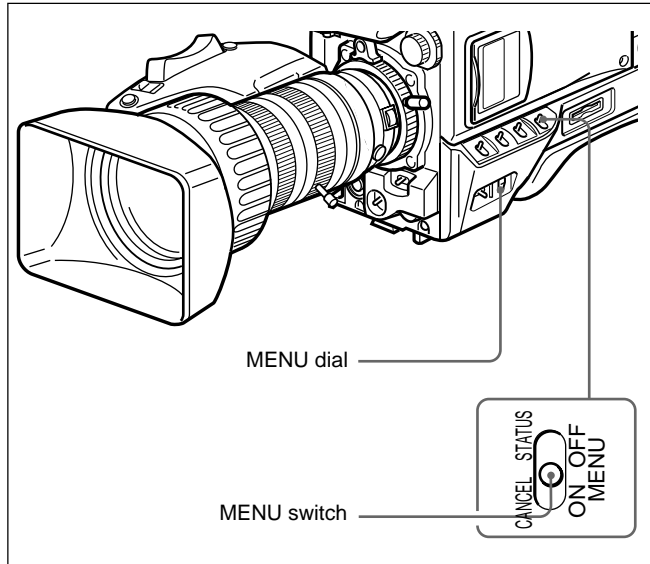
Menu Operation

To perform menu operations, first display the menu on the viewfinder screen or the monitor connected via the MONITOR OUT connector. There are six menus: USER, USER MENU CUSTOMIZE, OPERATION, PAINT, MAINTENANCE, and FILE. You can display the USER menu directly from the normal-indication display, but to select other menus, first display the TOP MENU, then select the desired menu.

Note

The menus cannot be displayed during EZ MODE, EZ FOCUS, auto white balance adjustment, or auto black balance adjustment.

Displaying the Menus



Displaying the USER menu

While the normal indications are displayed, press the MENU switch toward the ON/CANCEL side. The USER menu that had been displayed when the power was turned off the last time is displayed on the viewfinder screen.

<USER PAGE 1>		U1
A. IRIS OVERRIDE	:	0
DTL LEVEL	:	0
MASTER BLACK	:	0
PRESET MATRIX	:	STD
SCREEN MODE	:	16:9

Displaying the TOP MENU

The TOP MENU can be displayed in either of the following ways:

- While holding the MENU dial pressed, press the MENU switch toward the ON/CANCEL side.
- Select TOP at the right top on the menu.

```
<TOP MENU>
→USER
USER MENU CUSTOMIZE
OPERATION
PAINT
MAINTENANCE
FILE
```

To make the TOP MENU disappear

Turn off the camera or press the MENU switch toward the OFF/STATUS side.

The TOP MENU automatically disappears when the EZ MODE or EZ FOCUS button is pressed.

Displaying your desired menu

- 1 Display the TOP MENU.

For details, see "Displaying the TOP MENU."

- 2 Turn the MENU dial to move the arrow to your desired menu, then press the MENU dial.

The first page of the selected menu is displayed.

To make the menu disappear

Press the MENU switch toward the OFF/STATUS side.

Displaying your desired menu page

- 1 Turn the MENU dial to move the arrow to the page number at the top of the screen, then press the MENU dial.

Or, press the MENU switch to the ON/CANCEL side.

The arrow changes to a question mark.

- 2 Turn the MENU dial until your desired menu page is displayed, then press the MENU dial.

Menu Operation

The question mark changes to an arrow, and the selected menu page is displayed.

Setting the Menus

Display the menu page on which you wish to make settings, then proceed in the following manner:

- 1** Turn the MENU dial to move the arrow to your desired item, then press the MENU dial.

The arrow changes to a question mark.

- 2** Turn the MENU dial to select your desired setting item or value, then press the MENU dial.

The question mark changes to an arrow, and your setting is registered.

Repeat Steps **1** and **2**.

When you finish making settings

Press the MENU switch toward the OFF/STATUS side to exit the menu.

To cancel changing a setting

While the question mark is displayed in Step **2**, press the MENU switch toward the ON/CANCEL side. The original setting will be restored.

To return a setting item to the default value

Turn the MENU dial to move the cursor to the item whose value you wish to return to its default, then hold the MENU dial pressed for three seconds.

USER Menu

The USER menu consists of five pages (factory setting), on which frequently used items of the OPERATION, PAINT, MAINTENANCE, and FILE menus are assigned. You can change the assigned items using the USER MENU CUSTOMIZE menu.

```
<USER PAGE 1>      U1
A.IRIS OVERRIDE :    0
DTL LEVEL       :    0
MASTER BLACK    :    0
PRESET MATRIX   : STD
SCREEN MODE     : 16:9
```

Structures and setting values of the USER menu

Submenu title	Page	Setting item: Initial value	Selectable value	Remarks
<USER PAGE 1>	U1	A.IRIS OVERRIDE: 0	–99 to 0 to 99	To adjust the reference value for auto aperture
		DTL LEVEL: 0	–99 to 0 to 99	To adjust the detail (contour correction) level
		MASTER BLACK: 0	–99 to 0 to 99	To adjust the master black level
		PRESET MATRIX: STD	STD, HI SAT, FL	To adjust the preset matrix STD: Standard color tone HI SAT: For more vivid picture (The color intensity increases a little.) FL: For shooting under fluorescent light, to prevent the skin color's becoming greenish
		SCREEN MODE: 16:9	16:9, 4:3	To select the aspect ratio of the output signal
<USER PAGE 2>	U2	SCENE STANDARD: EXECUTE	—	To select if the standard settings are to be used or not
		SCENE FILE 1	—	To read a scene file set with the FILE menu. (For details on settings, see "FILE menu" on page 70.)
		SCENE FILE 2	—	
		SCENE FILE 3	—	
		SCENE FILE 4	—	
		SCENE FILE 5	—	
<USER PAGE 3>	U3	SKIN DTL SW: OFF	ON, OFF	To turn skin tone detail on/off
		SKIN DTL SET: EXECUTE	—	To execute the skin set (The box cursor appears at the center of the screen. Move the cursor to where you wish to execute the skin set by turning the MENU dial, then press it to execute the skin set. For about 3 seconds after the MENU dial is pressed, a zebra pattern will be displayed to indicate the location where the skin tone is activated.)
		SKIN DTL LEVEL: 50	0 to 50 to 99	To adjust the detail level when skin-tone detail is set to ON. At 99, the maximum effects are obtained.
<USER PAGE 4>	U4	SAFETY ZONE SW: ON	ON, OFF	To turn the safety-zone display on/off
		CENTER MARKER SW: ON	ON, OFF	To turn the center marker on/off
<USER PAGE 5>	U5	SC PHASE: 0	0 to 999	To adjust the SC phase (Setting when gen-locked)
		H PHASE COARSE: 0	–99 to 0 to 99	To adjust the horizontal phase (Setting when gen-locked)
		H PHASE FINE: 0	–99 to 0 to 99	To fine-adjust the horizontal phase (Setting when gen-locked)

Using the USER Menu

You can select desired pages from among the OPERATION, PAINT, MAINTENANCE and FILE menu pages and copy and set them on the USER menu. If you register pages frequently used on the USER menu, you can easily call those pages and use them. In addition, USER PAGE 1 through USER PAGE 5, on which you can copy and register individual items from the menus, are provided on the USER menu. You can place up to ten desired menu items on each of these pages.

Registering a desired menu page on the USER menu

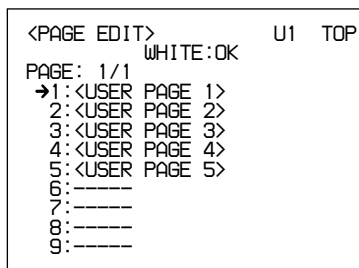
1 Display the TOP MENU.

For details, see “Displaying the TOP MENU” on page 55.

2 Turn the MENU dial to select USER MENU CUSTOMIZE, then press the MENU dial.

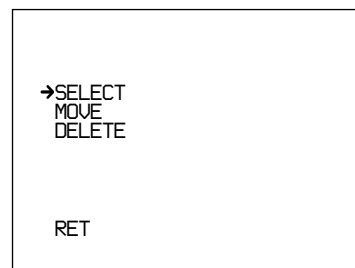
3 Display page U1 <PAGE EDIT>.

For details, see “Displaying your desired menu page” on page 55.



4 Turn the MENU dial to select the number for which the menu page is to be registered, then press the MENU dial.

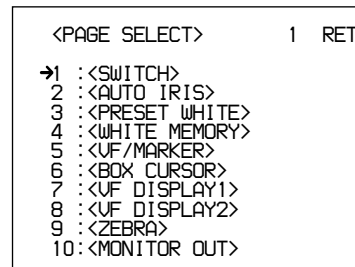
The operation select screen appears.



If you select a menu page on which no user page has been registered, the PAGE SELECT screen shown in Step 5 is displayed.

5 Turn the MENU dial to select SELECT, then press the MENU dial.

The PAGE SELECT screen appears.



6 Select a menu page to be registered, and register that page following the procedure below.

To select from among menu pages 1 - 10

Turn the MENU dial to select a menu page to be registered, then press the MENU dial. The selected menu page is registered on the USER menu, and the screen returns to the PAGE EDIT screen.

To select menu page 11 or after

1) Turn the MENU dial to move the arrow to the figure at the top of the screen, then press the MENU dial.

The arrow changes to a question mark.

2) Turn the MENU dial until the desired menu page appears, then press the MENU dial.

The question mark changes to the arrow.

3) Turn the MENU dial to select a menu page to be registered, then press the MENU dial.

The selected menu page is registered on the USER menu, and the screen returns to the PAGE EDIT screen.

To change the order of the pages

1 Display the TOP MENU.

For details, see “Displaying the TOP MENU” on page 55.

2 Turn the MENU dial to select USER MENU CUSTOMIZE, then press the MENU dial.

3 Display page U1 <PAGE EDIT>.

For details, see “Displaying your desired menu page” on page 55.

The PAGE EDIT screen is displayed.

4 Turn the MENU dial to select the menu page to be moved, then press the MENU dial.

The operation select screen appears.

5 Turn the MENU dial to select MOVE, then press the MENU dial.

The screen returns to the PAGE EDIT screen.

6 Turn the MENU dial to move the arrow to the position where the page selected in step 4 is to be placed, then press the MENU dial.

The selected page moves to the position pointed to by the arrow.

To delete a registered page

1 Display the TOP MENU.

For details, see “Displaying the TOP MENU” on page 55.

2 Turn the MENU dial to select USER MENU CUSTOMIZE, then press the MENU dial.

3 Display page U1 <USER P1 EDIT>.

For details, see “Displaying your desired menu page” on page 55.

The PAGE EDIT screen is displayed.

4 Turn the MENU dial to select the menu page to be deleted, then press the MENU dial.

The operation select screen appears.

5 Turn the MENU dial to select DELETE, then press the MENU dial.

The menu page selected in Step 4 is deleted, and the screen returns to the PAGE EDIT screen.

Registering a desired item on a USER PAGE

To register a desired item on a USER PAGE, follow the procedure below.

1 Display the TOP MENU.

For details, see “Displaying the TOP MENU” on page 55.

2 Turn the MENU dial to select USER MENU CUSTOMIZE, then press the MENU dial.

3 Turn the MENU dial to move the arrow to the page number at the top of the screen, then press the MENU dial.

The arrow changes to a question mark.

4 Turn the MENU dial to select any of U2 through U11, then press the MENU dial.

The USER PAGE setting screen appears.

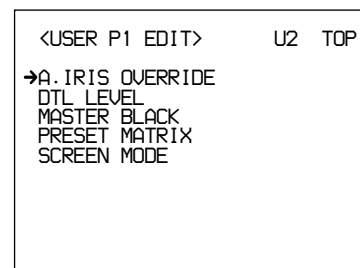
U2: USER PAGE 1 setting screen <USER P1 EDIT>

U3: USER PAGE 2 setting screen <USER P2 EDIT>

.

.

U11: USER PAGE 10 setting screen <USER P10 EDIT>



Menu Operation

- 5** Turn the MENU dial to select the line for which the menu item is to be registered, then press the MENU dial.

The operation select screen appears.

If you select a line for which no item has been registered, the ITEM SELECT screen shown in Step 6 is displayed.

- 6** Turn the MENU dial to select SELECT, then press the MENU dial.

The ITEM SELECT screen appears.

```
<ITEM SELECT>      1  RET
→1 :GAIN[L]
 2 :GAIN[M]
 3 :GAIN[H]
 4 :OUTPUT[DCC]
 5 :5600K DIMMER
 6 :OPERATION RESET
 7 :A.IRIS OVERRIDE
 8 :WHT C. TEMP
 9 :WHT C. TEMP FINE
10:WHT C. TEMP R GAIN
```

- 7** Select an item to be registered, following the procedure below.

To select from among items 1 - 10

Turn the MENU dial to select an item to be registered, then press the MENU dial. The screen returns to the USER P1 EDIT screen, and the selected item is displayed.

```
<USER P1 EDIT>      U2  TOP
→GAIN[L]
DTL LEVEL
MASTER BLACK
PRESET MATRIX
SCREEN MODE
```

To select items 11 or after

- 1)** Turn the MENU dial to move the arrow to the figure at the top of the screen, then press the MENU dial.

The arrow changes to a question mark.

- 2)** Turn the MENU dial until the desired item appears, then press the MENU dial.

The question mark changes to an arrow.

- 3)** Turn the MENU dial to select the item to be registered, then press the MENU dial.

The screen returns to the USER P1 EDIT screen, and the selected item is displayed.

Repeat Steps **5**, **6** and **7** as required.

- 8** When registration of all your desired items on the page is completed, turn the MENU dial to move the arrow to TOP at the top of the screen, then press the MENU dial.

The screen returns to the TOP MENU screen.

You must register the USER PAGE you have set to one of USER PAGE 1 through USER PAGE 10. Then you can retrieve and use the registered USER PAGE from the USER menu.

For details on how to register a USER PAGE, see “Registering a desired menu page on the USER menu,” page 56.

To change the order of the items

You can change the order for the items with the same method as that for the menu pages.

To delete an item

You can delete an item with the same method as that for the menu pages.

Resetting the settings on all USER PAGEs to the factory-preset values

- 1** Display the TOP MENU.

For details, see “Displaying the TOP MENU,” page 55.

- 2** Turn the MENU dial to select USER MENU CUSTOMIZE, then press the MENU dial.

- 3** Display page U12.

For details, see “Displaying your desired menu page” on page 55.

- 4** Turn the MENU dial to select CUSTOMIZE MENU RESET, then press the MENU dial.

The prompt “RESET OK?” is displayed.

5 Press the MENU dial.

The indication “USER MENU RESET” is displayed, and the settings on all USER PAGEs are reset to the factory-preset values.

Displaying the USER menu

The USER menu that has been registered as described above can be displayed and operated in the same manner as with other menus.

1 Display the TOP MENU.

For details, see “Displaying the TOP MENU” on page 55.

2 Turn the MENU dial to select USER, then press the MENU dial.

To display other menu pages

1 Turn the MENU dial to move the arrow to the figure at the top of the screen, then press the MENU dial.

The arrow changes to a question mark.

2 Turn the MENU dial to select the page to be displayed, then press the MENU dial.

The selected menu page is displayed.

Menu Operation

OPERATION Menu

The OPERATION menu consists of 11 pages. To display the OPERATION menu, first display the TOP MENU, turn the MENU dial to select OPERATION, then press the MENU dial.

For details on how to display the TOP MENU, see “Displaying the TOP MENU” on page 55.

<SWITCH>		1	TOP
GAIN	[L] : →	0dB	
	[M] :	9dB	
	[H] :	18dB	
OUTPUT	[DCC] :	AUTO KNEE	
5600K	DIMMER :	5	
OPERATION MENU RESET			

Structure and setting values of the OPERATION menu

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<SWITCH>	1	GAIN [L]: 0 dB	−3, 0, 3, 6, 9, 12, 18, 24, 30, 36	To set the GAIN L value
		GAIN [M]: 9 dB	−3, 0, 3, 6, 9, 12, 18, 24, 30, 36	To set the GAIN M value
		GAIN [H]: 18 dB	−3, 0, 3, 6, 9, 12, 18, 24, 30, 36	To set the GAIN H value
		OUTPUT [DCC]: AUTO KNEE	AUTO KNEE, ADAPTIVE	To set DCC operation mode
		5600K DIMMER: 5	0 to 5 to 9	To adjust the brightness for the LED of the 5600K button when it is lit to indicate the button's activation
		OPERATION MENU RESET	—	To reset the OPERATION menu settings to factory-preset values
<AUTO IRIS>	2	AUTO IRIS OVERRIDE: 0	−99 to 0 to 99	To adjust the reference value for auto aperture
<PRESET WHITE>	3	COLOR TEMP: 3200K	1520K to 3200K to 65535K	To adjust the preset color temperature value (when the W.BAL switch is set to PRE) for white balance
		FINE: 0	−99 to 0 to 99	To fine-tune the preset color temperature value for white balance
		R GAIN: 0	−99 to 0 to 99	To adjust the R (red) gain of the preset color temperature value for white balance
		B GAIN: 0	−99 to 0 to 99	To adjust the B (blue) gain of the preset color temperature value for white balance
<WHITE MEMORY>	4	AWB MEMORY MODE: 2	2, 2×4FL	To select if the two A and B white balance values are to apply to all four settings of the FILTER control or not 2: Not apply to the FILTER control 2×4FL: Apply to the FILTER control
		WIDE BAND AWB: ON	ON, OFF	To select if the 5600K button is to be automatically activated when the color temperature changes greatly
		SHOCKLESS WHITE: 3	OFF, 1, 2, 3, 4, 5	To adjust the transient time of switching white balance (this setting does not apply to on/off of the 5600K button)

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<VF/MARKER>	5	SAFETY ZONE: ON	ON, OFF	To turn the safety-zone display on/off
		90%	80%, 90%	To select the size of the safety zone
		NORMAL ^{a)}	NORMAL, ASPECT	To select if the safety zone is to change in accordance with the aspect ratio
		ASPECT IND: OFF ^{a)}	LINE, MASK, LINE&MASK, OFF	To select the aspect indication: by line (LINE) or masking off a portion (MASK)
		(- -) ^{a)}	15:9, 14:9, 13:9, 4:3	To select the aspect ratio for aspect indication (available only when ASPECT IND is set to LINE)
		CENTER MARKER: ON	ON, OFF	To turn the center marker on/off
		VF SCAN: AUTO ^{a)}	AUTO, 16:9, 4:3	To select if the aspect ratio of the camera is to apply to the viewfinder
<BOX CURSOR>	6	CURSOR: OFF	ON, OFF	To turn the box cursor display on/off
		H POSITION: 50	0 to 50 to 99	To adjust the horizontal position of the box cursor
		V POSITION: 50	0 to 50 to 99	To adjust the vertical position of the box cursor
		H WIDTH: 50	0 to 50 to 99	To adjust the horizontal width of the box cursor
		V WIDTH: 50	0 to 50 to 99	To adjust the vertical width of the box cursor
<VF DISPLAY1>	7	IRIS: ON	ON, OFF	To turn on/off the display of IRIS setting value on the viewfinder
		GAIN: ON	ON, OFF	To turn on/off the display of GAIN setting value on the viewfinder
		WHITE: ON	ON, OFF	To turn on/off the display of WHITE setting value on the viewfinder
		ND FILTER: ON	ON, OFF	To turn on/off the display of FILTER setting value on the viewfinder
		5600K: ON	ON, OFF	To turn on/off the 5600K indication on the viewfinder
		SHUTTER: ON	ON, OFF	To turn on/off the display of SHUTTER setting value on the viewfinder
		SKIN DTL: ON	ON, OFF	To turn on/off the display of SKIN DTL setting value on the viewfinder
<VF DISPLAY2>	8	AUDIO: ON	ON, OFF	To turn on/off the display of AUDIO setting value on the viewfinder
		TAPE REMAIN: ON	ON, OFF	To turn on/off the tape remaining time display on the viewfinder
		VTR STATUS: ON	ON, OFF	To turn on/off the VTR status display on the viewfinder
		VTR ALARM: ON	ON, OFF	To set if VTR warning indications are displayed on the viewfinder or not
		TIME CODE: ON	ON, OFF	To set if time code is displayed on the viewfinder or not
		RETURN: ON	ON, OFF	To set if the return video indication is displayed on the viewfinder or not.
		VF TALLY: ×1	×1, ×2	To select if both the upper and lower tally lamps (×2) in the viewfinder are to function or only the upper lamp (×1) functions

a) - -: Not available for the DXC-D50/D50P

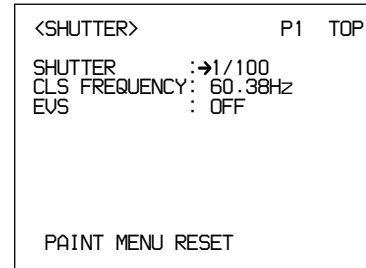
Menu Operation

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<ZEBRA>	9	ZEBRA MODE: 1&2	1, 2, 1&2	To select if one zebra pattern or two zebra patterns are to be displayed
		ZEBRA1 LEVEL: 75%	50 to 75 to 109	To adjust the display level of Zebra 1
		WIDTH: 10%	0 to 10 to 30	To adjust the range of video level of Zebra 1
		ZEBRA2 LEVEL: 100%	50 to 100 to 109	To adjust the display level of Zebra 2
<MONITOR OUT>	10	MONITOR OUT: ENC	ENC, Y	To select the output signal from the MONITOR OUT connector
		CHARACTER: ON	ON, OFF	To select if character data are to be superimposed on the MONITOR OUT signal or not
		RM CHARACTER: OFF	ON, OFF	To select if character data are to be superimposed on the REMOTE signal or not
<TLCS>	11	AGC: ON	ON, OFF	To set if AGC is to be activated or not when TLCS is activated
		AGC LIMIT: 12	3, 6, 9, 12, 15, 18	To adjust the limit value for AGC when TLCS is activated
		AGC CHANGE POINT: F2.8	F-5.6, F-4, F-2.8, F-2, OPEN	To adjust the aperture value at which AGC (auto gain control) is to be activated when TLCS is activated
		AE: ON	ON, OFF	To set if AE (electronic shutter) is to be activated or not when TLCS is activated
		AE LIMIT: 1/250	1/100, 1/150, 1/200, 1/250	To set the limit value for AE (electronic shutter) operation when TLCS is activated
		AE CHANGE POINT: F16	F-16, F-11, F-8, F-5.6	To set the aperture limit value at which AE (electronic shutter) operation is to be activated when TLCS is activated

PAINT Menu

The PAINT menu consists of 10 pages. To display the PAINT menu, first display the TOP MENU, turn the MENU dial to select PAINT, then press the MENU dial.

For details on how to display the TOP MENU, see “Displaying the TOP MENU” on page 55.



Structure and setting values of the PAINT menu

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<SHUTTER>	P1	SHUTTER: 1/100 ^{a)}	—	To adjust the shutter speed
		CLS FREQUENCY: 50.31 (PAL) 60.38 (NTSC)	60.38 Hz ^{b)}	To adjust the CLS frequency
		EVS: OFF	ON, OFF	To set EVS (The vertical resolution is changed from 400 lines to 450 lines.) Note When EVS is turned ON, the vertical resolution can be increased, but aliasing may be generated when shooting a moving subject.
		PAINT MENU RESET	—	To reset the PAINT menu settings
<BLACK/FLARE>	P2	MASTER BLACK: 0	–99 to 0 to 99	To adjust the master black level
		FLARE LEVEL: [R] 0 [G] 0 [B] 0	–99 to 0 to 99	To adjust the flare level
		ON	ON, OFF	To turn the flare on/off
<DETAIL>	P3	LEVEL: 0	–99 to 0 to 99	To adjust the detail (contour correction) level
		H/V RATIO: 0	–99 to 0 to 99	To adjust the ratio of vertical detail to horizontal detail in detail correction (contour correction)
		LEVEL DEPEND: 0	–99 to 0 to 99	To decrease the black level in the detail correction (contour correction)
		FREQUENCY: 0	–99 to 0 to 99	To adjust thickness of contour lines for the detail correction (contour correction)
		CRISP: 0	–99 to 0 to 99	To adjust the level at which noise signals are to be removed in the detail correction (contour correction)
<GAMMA/BLACK GAMMA>	P4	GAMMA LEVEL: [R] 0 [B] 0 [M] 0	–99 to 0 to 99	To adjust the gamma curve
		BLACK GAMMA LEVEL: [R] 0 [B] 0 [M] 0	–99 to 0 to 99	To adjust the gamma curve near the black

a) NTSC: 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, CLS
PAL: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, CLS

b) When the camera is used alone
NTSC: 60.38 Hz to 6000 Hz
PAL: 50.00 Hz to 6000 Hz

When the camera is used with the RCP-TX7
NTSC: 60.38 Hz to 200.3 Hz (The display on the panel of the RCP-TX7 is 60.4.)
PAL: 50.31 Hz to 201.4 Hz

When the camera is used with the RCP-D50/D51
NTSC: 60.38 Hz to 6000 Hz
PAL: 50.31 Hz to 6000 Hz

Menu Operation

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<KNEE/WHITE CLIP>	P5	KNEE POINT: 0 (not available when DCC is activated)	–99 to 0 to 99	To adjust the knee point
		KNEE SLOPE: 0 (not available when DCC is activated)	–99 to 0 to 99	To adjust the knee slope
		WHITE CLIP: 0	–99 to 0 to 99	To adjust the white clip level
<WHITE SHADING>	P6	V MODULATION: [R] 0 [G] 0 [B] 0	–99 to 0 to 99	For vertical shading correction of the white
<SKIN DTL/MATRIX>	P7	SKIN DTL: OFF	ON, OFF	To turn skin tone detail on/off
		LEVEL: 50	0 to 50 to 99	To adjust the detail level when skin-tone detail is set to ON. At 99, the maximum effects are obtained.
		SET: EXECUTE	—	To execute the skin set (The box cursor appears at the center of the screen. Move the cursor to where you wish to execute the skin set by turning the MENU dial, then press it to execute the skin set. For about 3 seconds after the MENU dial is pressed, a zebra pattern will be displayed to indicate the location where the skin tone is activated.)
		PHASE: 0	0 to 359 to 0	To adjust the color phase when the skin-tone detail is activated (the color phase is automatically calculated when SET is executed, but it can be manually changed)
		WIDTH: 30	0 to 30 to 90	To adjust the width of color phase when skin-tone detail is activated (as the value becomes smaller, the width of the detail effects decreases)
		SATURATION: –89	–99 to 0 to 99	To adjust the saturation (color intensity) of the color on which skin-tone detail is to function
		GATE: OFF	ON, OFF	To turn on/off the function that enables checking of the range where skin-tone detail is functioning (If GATE is set to ON, the areas where skin-tone detail is functioning can be checked with the zebra signal displayed on the viewfinder. If the MONITOR OUT signal is monitored, the color tone of the area where skin-tone detail is functioning changes. The GATE signal is not superimposed on the output from the VIDEO OUT connector.)
		SKIN MATRIX	—	To change the matrix of the phase area where skin-tone detail is functioning
		SATURATION: 0	–99 to 0 to 99	To adjust the color saturation (color intensity)
		HUE: 0	–99 to 0 to 99	To adjust the hue

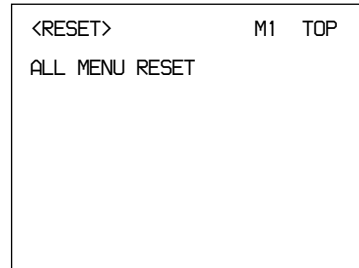
Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<USER MATRIX>	P8	SATURATION: 0	–99 to 0 to 99	To adjust the color saturation (color intensity) of the whole picture
		HUE: 0	–99 to 0 to 99	To adjust the hue of the whole picture
		[-R] [-G] [-B]	—	To adjust the matrix
		R: – 0 0	–99 to 0 to 99	To adjust the R-G, R-B axes
		G: 0 – 0	–99 to 0 to 99	To adjust the G-R, G-B axes
		B: 0 0 –	–99 to 0 to 99	To adjust the B-R, B-G axes
		PRESET MATRIX: STD	STD, HI SAT, FL	To adjust the preset matrix STD: Standard color tone HI SAT: For more vivid picture (The color intensity increases a little.) FL: For shooting under fluorescent light, to prevent the skin color's becoming greenish
<LOW KEY SATURATION>	P9	LEVEL: 0	–99 to 0 to 99	To correct the color saturation (color intensity) in dark areas
<CROSS COLOR>	P10	SUPPRESSION: 0	0 to 99	To reduce coloring caused by cross color when a fine pattern is shot

Menu Operation

MAINTENANCE Menu

The MAINTENANCE menu consists of 6 pages. To display the MAINTENANCE menu, first display the TOP MENU, turn the MENU dial to select MAINTENANCE, then press the MENU dial.

For details on how to display the TOP MENU, see “Displaying the TOP MENU” on page 55.



Structure and setting values of the MAINTENANCE menu

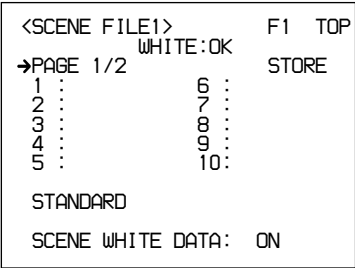
Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<RESET>	M1	ALL MENU RESET	—	To reset all user-set menu items to the factory-preset values (The date and time settings are not reset.)
<GEN LOCK>	M2	GENLOCK	—	GENLOCK settings (No value is displayed when genlock is not performed.)
		H PHASE [COARSE]: 0	–99 to 0 to 99	To adjust the horizontal phase
		H PHASE [FINE]: 0	–99 to 0 to 99	To fine-adjust the horizontal phase
		SC PHASE: 0	0 to 999	To adjust the SC phase
		MAINTENANCE MENU RESET:	—	To reset the MAINTENANCE menu settings to the factory-preset values (The date and time settings are not reset.)
<CLOCK>	M3	Ex.)2003/04/30 08:32:45	—	To set the date and time
		HOURL TYPE: 12H	12H, 24H	To select the type of time indication
		DATE TYPE: 1	1 to 6	To select the type of date indication: 1: Y/Mn/D (year/month/day, month in numerics) 2: Mn/D (month/day, month in numerics) 3: D/M/Y (day/ month/year) 4: D/M (day/month) 5: M/D/Y (month/day/year) 6: M/D (month/day)
		CLOCK IND: OFF	OFF, CAM, BARS	To select the clock indication to be output from the VIDEO OUT connector: OFF: No clock indication CAM: To display clock indication during video output and color-bar output BARS: To display the clock indication only during color-bar output
<CAMERA ID>	M4	CAMERA ID:	—	Up to 8 characters are output during color-bar output (On the character-input screen, press RET to register an entered camera ID.)
		CAMERA ID IND: OFF	ON, OFF	To turn on/off the camera ID indication in color bar mode
<LENS SELECT>	M5	LENS: 3	1 to 16	Select the lens number according to the lens to be used. (If your lens is not among the choices, shoot a white subject and select the lens number for which no color appears at the upper and lower portions of the screen.) For details, see “Designating the lens” on page 83.
			—	To display the typical products of the selected lens file

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<OTHERS>	M6	COLOR BARS MODE: SMPTE (NTSC) FULL (75%) (PAL)	SMPTE (SPLIT for PAL), FULL (75%), FULL (100%)	To select the type of the color bars
		TONE: ON	ON, OFF	To turn on/off 1-kHz-tone signal output (When TONE is set to ON, the tone signal is output in color bar mode.)
		VF PB SELECT: Y	–, Y, VBS	To select the video output to the viewfinder (available when the DSR-1/1P is connected): Y: Monochrome signal VBS: Color signal
		SCREEN MODE: 16:9 (Not available for the DXC-D50/D50P)	16:9, 4:3	To select the aspect ratio of the output signal
		WIDE ID: ON	ON, OFF	To turn on/off wide ID output when SCREEN MODE is set to 16:9
		CHU CALL: OFF	ON, OFF	To turn on and off the TALLY indicator in the viewfinder when the CALL button on the CA-TX50/TX50P is pressed if the CA-TX50/TX50P and CCU-TX50/TX50P are connected. If the TALLY indicator is lit, it goes dark.
		CCU CALL: ON	ON, OFF	To turn on and off the TALLY indicator in the viewfinder when the CALL button on the CCU-TX50/TX50P or on the RCP connected to the CCU-TX50/TX50P is pressed, if the CA-TX50/TX50P and CCU-TX50/TX50P are connected. If the TALLY indicator is lit, it goes dark.

FILE Menu

The FILE menu consists of 4 pages. To display the FILE menu, first display the TOP MENU, turn the MENU dial to select FILE, then press the MENU dial.

For details on how to display the TOP MENU, see “Displaying the TOP MENU” on page 55



Using the scene files, data for specific shooting conditions are stored in memory of this unit, and stored data can be retrieved. Up to 20 scene files can be registered, and scene files can be stored in a Memory Stick. A scene file stored in a Memory Stick can be copied to other DXC-D50/D50P/D50WS/D50WSP cameras to easily share the same setup among several cameras.

For details, see “Storing and Retrieving a Scene File” on page 70, and “Storing to and Retrieving from a Memory Stick” on page 71.

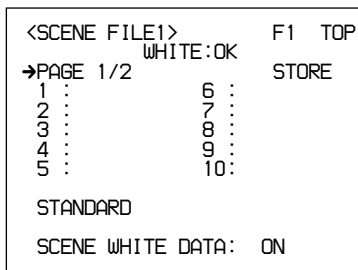
Structure and setting values of the FILE menu

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<SCENE FILE1>	F1	PAGE 1/2	1/2, 2/2	To select a scene file. Up to 20 files can be set or selected. If the 11th file or onward is not set, Page 2/2 will not be displayed.
		STORE	—	To store a scene file
		PAGE 1/2:1: to 10: PAGE 2/2:11: to 20:	—	To retrieve the scene file corresponding to the selected number
		STANDARD:	—	To select if the standard settings are to be used or not
		SCENE WHITE DATA: ON	ON, OFF	To select if white balance data are to be included in the scene files read from memory.
<SCENE FILE2>	F2	SCENE FILE	—	To write or read a scene file to/from a Memory Stick
		READ (MS→CAMERA)	—	To copy the data in the Memory Stick to the camera Note If scene files are stored in the camera, they are replaced by the data from the Memory Stick.
		WRITE (CAMERA→MS)	—	To write the data in the camera onto the Memory Stick. All scene files set in the camera are copied. Note If any scene file data are stored in the Memory Stick, they are replaced by the data from the camera.
		FILE ID:	—	A filename within 8 characters can be set.
		CAM CODE	—	The model name of the camera is automatically displayed.
		DATE 2003/08/01	—	To display the date when a file is created

Submenu title	Page	Setting item: Initial value	Selectable values	Remarks
<OPERATOR FILE>	F3	OPERATOR FILE	—	To write or read data for this camera (incl. settings of customized USER menu) to/from a Memory Stick
		READ (MS→CAMERA)	—	To copy the data in the Memory Stick to the camera Note If any operator file data are stored in the camera, the data for menu settings are replaced by the data from the Memory Stick.
		WRITE (CAMERA→MS)	—	To write the data in the camera to the Memory Stick Note If any operator file data are stored in the Memory Stick, they are replaced by the data from the camera.
		FILE ID:	—	A filename within 8 characters can be set.
		CAM CODE	—	The model name of the camera is automatically displayed.
		DATE 2003/08/01	—	To display the date when a file is created
<MEMORY STICK>	F4	MEMORY STICK FORMAT	—	To format a Memory Stick Note All data stored in the Memory Stick will be erased.

Storing and Retrieving a Scene File

Storing a scene file



- 1 Make the adjustments of the camera so that the values you wish to store as a scene file are obtained.

- 2 Display page F1 <SCENE FILE1> of the FILE menu.

For details, see “Displaying your desired menu” on page 55.

- 3 Turn the MENU dial to select STORE, then press the MENU dial.

- 4 Turn the MENU dial to select FILE NO, then press the MENU dial.

The arrow changes to a question mark.

- 5 Turn the MENU dial to select a scene-file number corresponding to the memory cell in which you wish to store the setting data, then press the MENU dial.

- 6 Turn the MENU dial to select FILE NAME, then press the MENU dial.

The arrow changes to a question mark.

- 7 Enter a filename within 8 characters.

- 8 Press EXECUTE.

The setting values of the camera adjusted in Step 1 are stored in the camera as a scene file.

You can store a scene file without entering a filename (only with the file number).

Retrieving a scene file

- 1 Display page F1 <SCENE FILE1> of the FILE menu.

For details, see “Displaying your desired menu” on page 55.

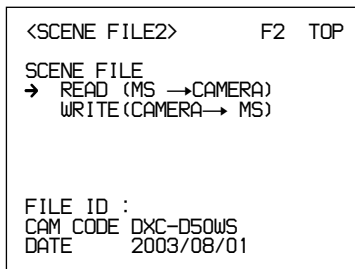
- 2 Turn the MENU dial to select the number corresponding to the desired scene file, then press the MENU dial.

The selected scene file is retrieved, and the settings of the camera are replaced with the data from the retrieved file.

Storing to and Retrieving from a Memory Stick

A scene file or an operator file stored in the camera can be copied to and stored in the Memory Stick, and stored data can be read by another camera.

Storing a scene file



- 1** Display page F2 <SCENE FILE2> of the FILE menu.
For details, see “Displaying your desired menu” on page 55.
- 2** Turn the MENU dial to select FILE ID, then press the MENU dial.
- 3** Enter a filename within 8 characters, then press RET.
- 4** Turn the MENU dial to select WRITE (CAMERA→MS), then press the MENU dial.

All files stored in the camera are written to the Memory Stick. If any data have already been stored in the Memory Stick, those data are replaced with the data from the camera.

Retrieving a scene file

- 1** Display page F2 <SCENE FILE2> of the FILE menu.
For details, see “Displaying your desired menu” on page 55.
- 2** Turn the MENU dial to select READ (MS→CAMERA), then press the MENU dial.

All scene files stored in the Memory Stick are written to the camera. If any scene file has already been stored in the camera, that is replaced with the data from the Memory Stick.

Storing the operator file

- 1** Display page F3 <OPERATOR FILE> of the FILE menu.
For details, see “Displaying your desired menu” on page 55.
- 2** Turn the MENU dial to select FILE ID, then press the MENU dial.
- 3** Enter a filename within 8 characters, then press RET.
- 4** Turn the MENU dial to select WRITE (CAMERA→MS), then press the MENU dial.

All setting data, including the customized USER menu, in the camera are written to the Memory Stick as the operator file. If any data have already been stored in the Memory Stick, those data are replaced with the data from the camera.

Retrieving the operator file

- 1** Display page F3 <OPERATOR FILE> of the FILE menu.
For details, see “Displaying your desired menu” on page 55.
- 2** Turn the MENU dial to select READ (MS→CAMERA), then press the MENU dial.

The operator file stored in the Memory Stick is written to the camera. If an operator file has already been stored in the camera, that is replaced with the data from the Memory Stick.

Menu Operation

Items Stored in a File

You can store the setting for each item set in menu operations in a scene file and/or an operator file. The table below shows in which file the setting of each

item is to be stored and the factory setting value.

* : Stored in the corresponding file

Function	Selectable values	Scene file	Operator file	Factory setting
GAIN	-3, 0, 3, 6, 9, 12, 18, 24, 30, 36 dB	*	—	0 dB
Shutter	Shutter On	*	—	OFF
	Shutter Speed	*	—	1/100
	EVS	*	—	OFF
	CLS On	*	—	OFF
	CLS Speed	*	—	60.38 Hz
Optical Filter	Filter Position	*	—	1
5600K	5600K On	*	—	OFF
White	R White	*	—	0
	B White	*	—	0
Black	Master Black	*	—	0
	R Black	*	—	0
	B Black	*	—	0
Flare	Flare On	*	—	ON
	R Flare	*	—	0
	G Flare	*	—	0
	B Flare	*	—	0
Detail	Detail Level	*	—	0
	Crispening	*	—	0
	Frequency	*	—	0
	H/V Ratio	*	—	0
	Level Depend	*	—	0
	Fine Detail	*	—	0
Gamma	R Gamma	*	—	0
	B Gamma	*	—	0
	M Gamma	*	—	0
Black Gamma	R Black Gamma	*	—	0
	B Black Gamma	*	—	0
	M Black Gamma	*	—	0
	RGB Black Gamma Range	*	—	High
Knee	M Knee Point	*	—	0
	M Knee Slope	*	—	0
	Auto Knee (DCC) On	*	—	ON
Skin Detail	Skin DTL On	*	—	OFF
	Skin Gate	—	—	—
	Skin Level	*	—	50
	Skin Phase	*	—	0
	Skin Width	*	—	30
	Skin Sat	*	—	-89

Function	Selectable values	Scene file	Operator file	Factory setting
Skin Matrix	Skin Matrix Saturation	*	—	0
	Skin Matrix Hue	*	—	0
Matrix	Preset Matrix Select	*	—	STD
	Saturation	*	—	0
	Hue	*	—	0
	R-G	*	—	0
	R-B	*	—	0
	G-R	*	—	0
	G-B	*	—	0
	B-R	*	—	0
	B-G	*	—	0
Low Key Sat.	Low Key Saturation	*	—	0
Cross Color Suppress	Level	*	—	0
Switch Assign	5600K Switch Dimmer	—	*	5
	Gain [L]	—	*	0 dB
	Gain [M]	—	*	+9 dB
	Gain [H]	—	*	+18 dB
	Output [DCC]	—	*	Auto Knee
Iris	Auto Iris Override	—	*	0
	Auto Iris Mode	*	—	STD
Preset White	Color Temp	—	*	3200K
	Fine	—	*	0
White Memory	AWB MEMORY MODE	—	*	2
	WIDE BAND AWB	—	*	ON
	SHOCKLESS WHITE	—	*	3
VF Marker	Safety Zone On	—	*	ON
	Safety Zone Select	—	*	90%
	Safety Zone Normal/Aspect	—	*	Normal
	Aspect Ind Type	—	*	OFF
	Aspect Ind 4:3-15:9	—	*	4:3
	Center Marker On	—	*	ON
	Box Cursor On	—	*	OFF
	Box Cursor H Position	—	*	50
	Box Cursor V Position	—	*	50
	Box Cursor H Width	—	*	50
	Box Cursor V Width	—	*	50
	VF SCAN	—	*	AUTO

Function	Selectable values	Scene file	Operator file	Factory setting
VF Display	ND	—	*	ON
	IRIS	—	*	ON
	White	—	*	ON
	5600K	—	*	ON
	Gain	—	*	ON
	Shutter	—	*	ON
	Skin DTL	—	*	ON
	Audio	—	*	ON
	Tape Remain	—	*	ON
	VTR Status	—	*	ON
	VTR Alarm	—	*	ON
	Timecode	—	*	ON
	VF Tally	—	*	x1
VF DTL	VF DTL On	—	*	ON
Zebra	Zebra 1/2/1&2	—	*	1&2
	Zebra 1 Level	—	*	75%
	Zebra 1 Width	—	*	10%
	Zebra 2 Level	—	*	100%
Character	MONITOR Character On	—	*	ON
	RM Character	—	*	OFF
TLCS	AGC SW	—	*	ON
	AGC LIMIT	—	*	12 dB
	AGC CHANGE POINT	—	*	F2.8
	AE SW	—	*	ON
	AE LIMIT	—	*	1/250
	AE CHANGE POINT	—	*	F16

Adjustments and Settings

White Balance Adjustment

Adjusting the white balance ensures that as lighting conditions change white objects remain white in the image and tones remain natural.

The color of light emitted varies from one light source to another, and as the lighting changes the apparent color of an illuminated subject changes. It is therefore necessary to adjust the white balance each time the principal lighting source changes.

Saving an Appropriate White Balance Value in Memory

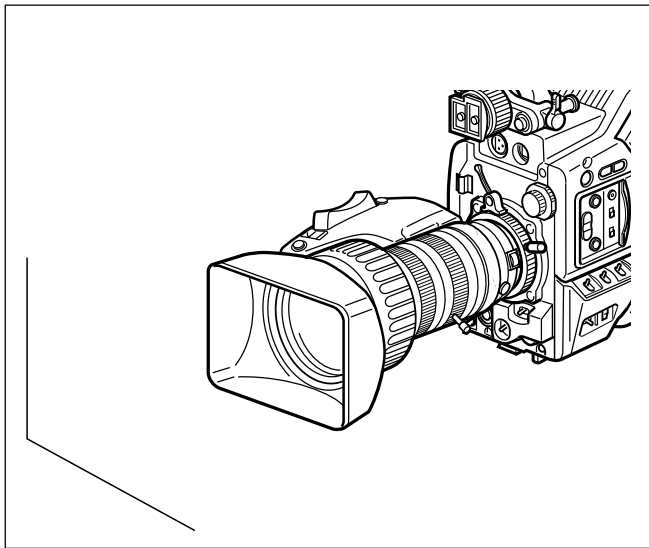
You can save two white balance values in separate memories, A and B. Unless changed, the saved values are retained for approximately ten years, even when the camera is powered off.

Once a value is saved, you can automatically restore the adjustment by moving the W. BAL switch to the A or B position. This makes shooting under alternating lighting conditions easy.

Separate white balance values for each FILTER control setting

In the default case, as described above, the same two A and B white balance values apply to all four settings of the FILTER control. It is possible, however, to change the AWB MEMORY MODE setting on page 4 <WHITE MEMORY> of the OPERATION menu (*see page 60*) so that there are eight possibly different values for the A and B positions and for the four FILTER control settings.

White Balance Adjustment



1 Make the following settings on the camera.

- POWER switch: ON/SAVE
- OUTPUT/DCC switch: one of the CAM positions
- Lens aperture selector: A (automatic)
- ATW button: OFF

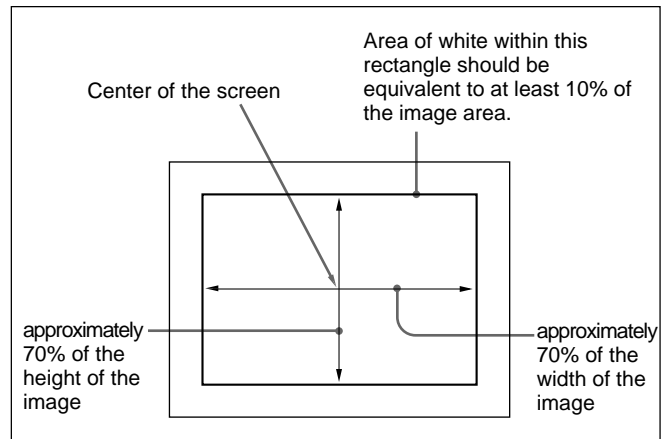
2 Set the FILTER control according to the lighting conditions. (See page 44.)

This step is not required when WIDE BAND AWB is set to ON on page 4 <WHITE MEMORY> of the OPERATION menu.

3 Set the W. BAL switch to A or B.

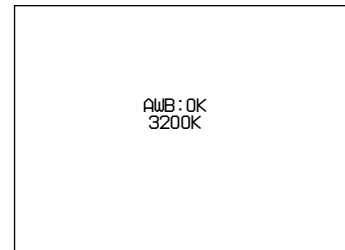
4 Arrange a white subject (paper, cloth, etc.) under the same lighting conditions as for shooting, and zoom in on it so that as far as possible the whole screen is white.

The minimum white area requirements for the adjustment are shown in the following figure.



5 Push the WHT/BLK switch in the WHT direction and release.

The white balance adjustment is carried out. During the adjustment the legend “AWB:EXECUTING” appears in the viewfinder. After a few seconds the adjustment is complete, and the legend in the viewfinder changes to “AWB:OK” plus a color temperature, as shown in the following figure.



The adjustment value is automatically saved in memory A or B as selected above. If you press the WHT/BLK switch toward either side while “AWB: EXECUTING” is being displayed, the white balance adjustment in progress is canceled, and the camera returns to the previous state.

To save the white balance adjustment for different lighting conditions, repeat steps **2** to **4** above. You can save two different values for the white balance, in memories A and B.

Note

When using a camera control unit or remote control unit, if the W/B BALANCE switch of the control unit is set to PRESET or MANUAL, it is not possible to carry out white balance adjustment on the camera.

To retrieve a white balance value from memory

Before beginning shooting, set the W. BAL switch to the A or B position. This automatically sets the camera to the white balance adjustment saved in the corresponding memory.

If white balance adjustment cannot be completed automatically

The warning message “AWB:NG” appears in the viewfinder.

Make the necessary corrections, then carry out the process again.

Warning messages for white balance adjustment

Message	Meaning and corrections to be made
AWB:NG LOW LIGHT	Light level is too low. <ul style="list-style-type: none"> • Increase the illumination level, open the aperture, or use the GAIN switch to increase the video signal level. • Check the setting of the FILTER control. • After these checks, retry the adjustment.
AWB:NG OVER LEVEL	The subject is not white, or the lighting level is too high. <ul style="list-style-type: none"> • Use a white subject. • Lower the illumination level, stop down the aperture, or use the GAIN switch to decrease the video signal level. • Check the setting of the FILTER control. • After these checks, retry the adjustment.
AWB:NG C.TEMP.LOW	The color temperature is too low. Try the following, in this order of precedence. <ol style="list-style-type: none"> (1) If the FILTER control is in position 3 or 4, change it to position 1 or 2, then retry the adjustment. (2) Check that the subject is completely white, then retry the adjustment. (3) The color temperature may be outside the range of the camera. Fit an appropriate color temperature conversion filter, then retry the adjustment.
AWB:NG C.TEMP.HI	The color temperature is too high. Try the following, in this order of precedence. <ol style="list-style-type: none"> (1) If the FILTER control is in position 1 or 2, change it to position 3 or 4, then retry the adjustment. (2) Check that the subject is completely white, then retry the adjustment. (3) The color temperature may be outside the range of the camera. Fit an appropriate color temperature conversion filter, then retry the adjustment.

Message Meaning and corrections to be made

AWB:NG TIME LIMIT	
AWB:BREAK	This message is displayed when the AWB adjustment is canceled upon your pressing the WHT/BLK switch to either side while the adjustment is being performed.
WHITE:PRESET	The W. BAL switch is in the PRESET position. Move the W. BAL switch to the A or B position.

Using the Preset White Balance Settings

The camera provides two preset white balance settings, for instant shooting with approximately the correct adjustment.

There are also particular shooting conditions under which the preset values may give better results than the human eye adjustment.

1 Set the W. BAL switch to PRE.

The white balance is automatically adjusted for the preset white balance selected on page 3 <PRESET WHITE> of the OPERATION menu (*see page 60*).

2 Press the 5600K button as required.

Light Sources and Color Temperature

Adjustment of the white balance to match the light source is essential to ensure correct color rendering. The color of a light source is indicated as a color temperature in kelvins (K). It is higher for bluish light, and lower for reddish light. When the camera is shipped it is adjusted for use with video lights (halogen lamps with a color temperature of 3200 K). For use with other light sources, therefore, adjustment is required.

First use the FILTER control to set the approximate color temperature, then carry out white balance adjustment.

The following table shows typical color temperature values for different light sources.

Color temperatures of different light sources		
Light source		Color temperature (K)
Natural	Artificial	
Clear sky		10,000
Light cloud		8,000
Cloudy or rainy skies		Blue light 7,000
		6,000
	Fluorescent light (daylight white)	5,000
Direct sunlight, noon	Mercury lighting	
	Fluorescent light (white)	White light
One hour after sunrise or before sunset	Fluorescent light (warm white)	4,000
		3,500
	Studio lighting	3,200
	Halogen lamps and video lights	Yellow light 3,000
		2,500
Thirty minutes after sunrise or before sunset	Incandescent lighting	
	Sodium street-lighting	
Sunrise or sunset	Candlelight	Red light 2,000

Using the ATW (Auto Tracing White Balance) Function

The ATW function continuously adjusts the white balance automatically to adapt to changes in lighting conditions.

Note

Depending on the shooting conditions, automatic adjustment may not necessarily give optimum results. For the best possible results, use the W. BAL switch.

To use the ATW function

Press the ATW button turning the indicator on. This activates the ATW function, and the ATW indication appears in the viewfinder.

To disable the ATW function, press the ATW button again, turning the indicator off.

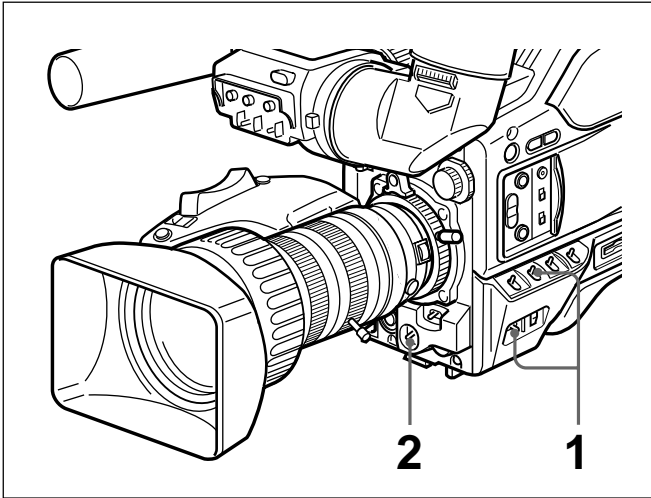
If the ATW function does not operate correctly

A warning message appears in the viewfinder as shown in the table below.

Message	Meaning and corrections to be made
:C.TEMP.LOW	If the 5600K button is turned on (lit), press the button to turn it off. Then retry the ATW operation.
:C.TEMP.HIGH	If the 5600K button is turned off (not lit), press the button to turn it on (lit). Then retry the ATW operation.

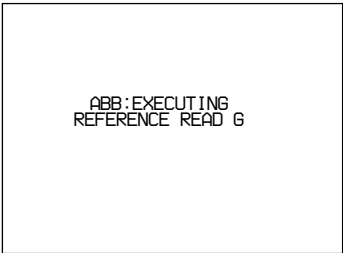
Black Balance Adjustment

Correct adjustment of the black balance is important for optimum operation of a video camera. It is necessary when using the camera for the first time or after a significant period out of use, and also when there has been a sudden change in temperature. The adjustment value is saved in memory, and readjustment is not normally necessary after powering the camera off or simply when lighting conditions change.



- 1 Move the POWER switch to the ON/SAVE position, and check that the OUTPUT/DCC switch is in one of the CAM positions.
- 2 Push the WHT/BLK switch in the BLK direction and release.

The lens aperture closes, and black balance adjustment is carried out.
During the adjustment the legend “ABB:EXECUTING” appears in the viewfinder.



After a dozens of seconds the adjustment is complete, and the legend in the viewfinder changes to “ABB:OK.”
If you press the WHT/BLK switch toward either side while “ABB: EXECUTING” is being displayed, the black balance adjustment in progress

is canceled, and the camera returns to the previous state.

Notes

- When using a camera control unit or remote control unit, if the W/B BALANCE switch of the control unit is set to MANUAL, it is not possible to carry out black balance adjustment on the camera.
- The black balance cannot be adjusted while recording. Since the readout mode of the CCD changes during black balance adjustment, some disturbance may be generated in the video output signal from the camera. If automatic black balance is activated when any peripheral equipment is connected, noise may be generated or warning indication may light, but this is not a problem.

If black balance adjustment cannot be completed automatically

The warning message “ABB:NG” appears in the viewfinder.
Make the necessary corrections, then carry out the process again.

Warning messages for black balance adjustment

Message	Meaning and corrections to be made
ABB:NG IRIS NOT CLOSE	The lens aperture did not close fully. Check whether the lens cable is connected properly, and whether there is a fault in the lens. If a second attempt to carry out the adjustment fails, consult your Sony dealer.
ABB:NG OVER FLOW	The aperture opened during adjustment or there is a hardware error. Close the aperture and try again. If this fails, consult your Sony dealer.
ABB:NG TIME LIMIT	Close the lens, then perform the Auto Black Balance adjustment again. If ABB adjustment cannot be performed on the second try, consult your Sony dealer.
ABB:BREAK	This message is displayed when the ABB adjustment is canceled upon your pressing the WHT/BLK switch to either side while the adjustment is being performed.
BARS	The camera is outputting a color bar signal. Move the OUTPUT/DCC switch to one of the CAM positions.



When using the CLS function

Watching the monitor screen, adjust the frequency to give minimum interference.

If there is a black band in the monitor image, reduce the frequency, and if there is a white band, increase the frequency.

For details on CLS setting, see page P1 <SHUTTER> of the PAINT menu.

To exit the menu to return to the normal indications

Press the MENU switch to the OFF/STATUS side.

The new setting of the shutter speed or CLS frequency appears in the normal screen display.

When shooting is finished

Set the SHUTTER switch to the OFF position.

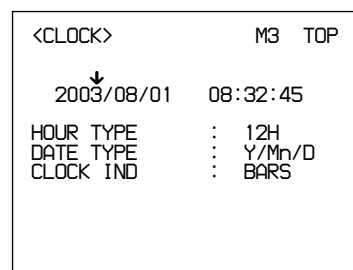
The SHUTTER indicator in the viewfinder goes off.

Setting the Clock and Timestamping Recordings

Use the page M3 <CLOCK> of the MAINTENANCE menu to set the camera head's internal clock and record the date and time.

Notes

- If the following date/time setting procedure for the internal clock does not cause the date/time information to be displayed in the MAINTENANCE menu, it may be due to a worn-out lithium battery in the camera head. See page 23 and replace the lithium battery.
- After replacing the lithium batteries, set the internal clock again. If you don't, the date/time will not be displayed.



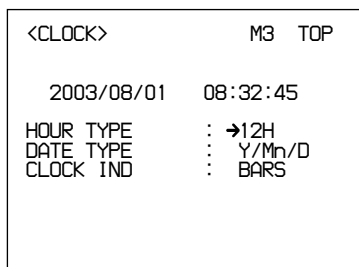
- 7** Turn the MENU dial until your desired figure appears, then press the MENU dial to register it.

Repeat Steps **6** and **7** until the date and time are set.

How to set the clock

- 1** Display the page M3 <CLOCK> of the MAINTENANCE menu.

For details, see "Displaying your desired menu page" on page 55.



- 2** Turn the MENU dial to move the cursor to HOUR TYPE, then press the MENU dial to select it.
- 3** Turn the MENU dial to select either of 12H or 24H, then press the MENU dial to register it.
- 4** Turn the MENU dial to move the cursor to DATE TYPE, then press the MENU dial to select it.
- 5** Turn the MENU dial to select the indication method of year, month, and day, then press the MENU dial to register it.
- 6** Turn the MENU dial to move the cursor to the figure you wish to change in the date and time indication, then press the MENU dial.

Timestamping recordings

You can timestamp recordings by superimposing the current date and time.

Before shooting, display page M3 <CLOCK> of the MAINTENANCE menu, and set CLOCK IND to CAM.

The date and time appear in the viewfinder, and are superimposed on the video signal output from the camera.

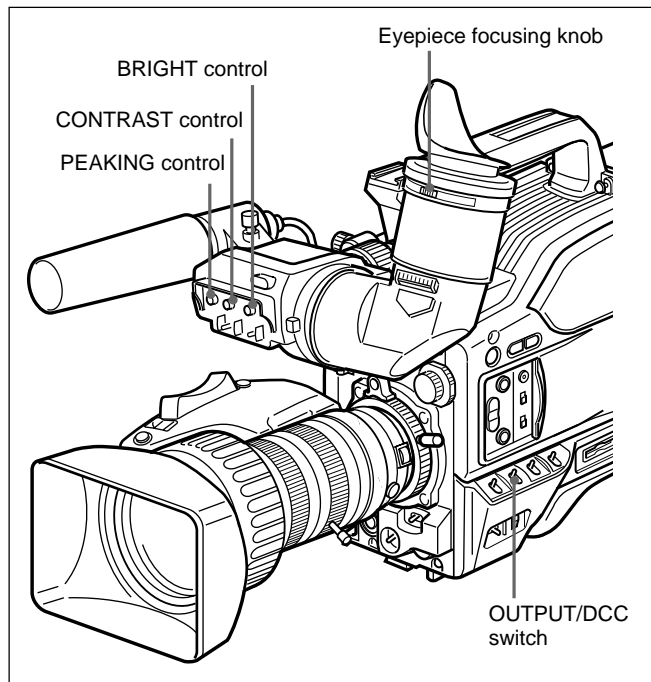
To stop superimposing the date and time

Set CLOCK IND to OFF.

Viewfinder Screen Adjustments

The following adjustments are provided to improve the visibility of the viewfinder screen.

Although these adjustment may make the viewfinder image clearer, they have no effect on the output video signal from the camera.



Adjusting the eyepiece focus

Depending on the eyesight of the camera operator — whether longsighted or shortsighted — the optimal position of the viewfinder image varies. Adjust the eyepiece focus to get the clearest viewfinder image for your eyesight. First focus the image with the lens, then adjust the eyepiece focusing knob. The adjustment range is from -3 to 0 diopters¹⁾ (default when shipped is 0 diopters).

Using an optional part allows you to modify the adjustment range to -2 to $+1$ diopters or -0.5 to $+3$ diopters.

For details, consult your Sony dealer.

Contrast and brightness adjustment

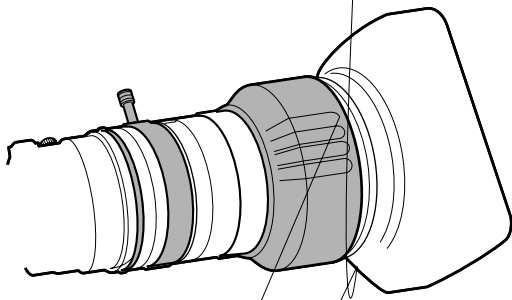
Carry out these adjustments with the color bars displayed.

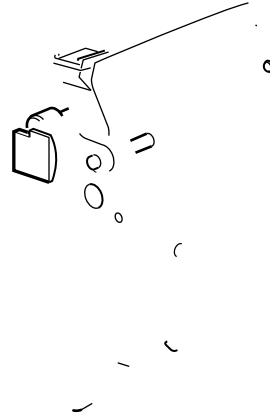
- 1** Set the OUTPUT/DCC switch to the BARS position.
The color bars appear in the viewfinder.
- 2** Watching the color bars, turn the CONTRAST and BRIGHT controls to adjust the contrast and brightness.
- 3** Return the OUTPUT/DCC switch to its original position.

Outline emphasis adjustment

Turning the PEAKING control changes the degree of outline emphasis in the viewfinder image, to make focusing easier.

1) **Diopter:** A unit to indicate the degree of convergence or divergence of a bundle of rays.





Adjusting the Lens

To designate the lens number

Set the number on page M5 <LENS SELECT> of the MAINTENANCE menu (page 66) according to the following table.

Lens number	Typical product
1	
2	A12×6.8
3	VCL-918BY, VCL-919BY, YJ18×9B KRS, YJ19×9B KRS, J33a×11B IASD
4	A16×9BRM/VCL-916BYA, A16×9.5BRM/VCL-916BY, YJ19×9B IRS, J33a×15B IASDS, PJ55×13.5B, A13×6.3BERM/BRM, A20×8.6BRM
5	JY12×6.5B4 IRS, YJ18×98 IRS, J21a×7.8B IRSD/IASD, J22e×7.6B IRSD/IASD, A13×4.5BERM, A22×7.8BERM
6	J9a×5.2B IRS/IAS, J11a×4.5B IRSD/IASD, J17a×7.7B IRSD/IASD
7	J15a×8B IRS, A16×9BERM, A17×7.8BERM, A19×8.7BERM/BRM, A20×8BEVM/BERD, A20×8.6BERM
8	A10×4.8BE, A15×8.8E, PJ55×9B
9 - 16	More precise settings according to your lenses are possible for lens numbers 9-16, if necessary. For details, consult your Sony dealer. (No data setting at shipping)

If using a lens not mentioned in the above table

Shoot a white subject so that the entire screen is filled with white. Try each lens number from 1 to 8 in order and set to the lens number with which other colors appearing on the upper and lower of the screen are most minimized. It should be noted that it takes several seconds until the results of a lens change is reflected on the screen.

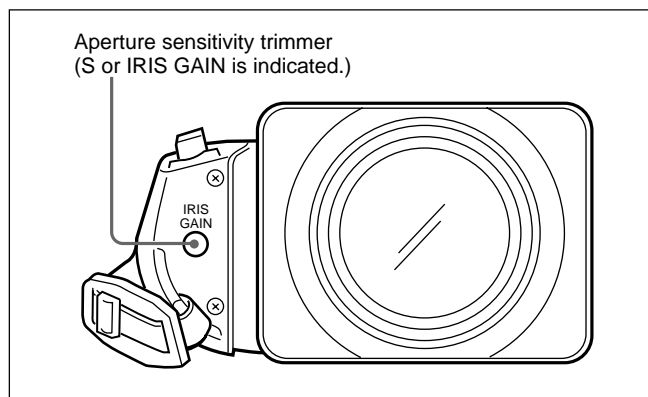
If an extender of the lens or a conversion lens is used, first turn it off, then select the lens number. In this case, care must be taken that color shading caused by light sources will not be generated.

More accurate setting is possible using measuring equipment, such as a waveform monitor.

Adjusting the Aperture Sensitivity

You usually need not adjust the aperture sensitivity because lenses are equipped with aperture sensitivity adjustment function.

In auto aperture mode, if hunting or response delay happens, adjust the aperture sensitivity using the aperture sensitivity trimmer.



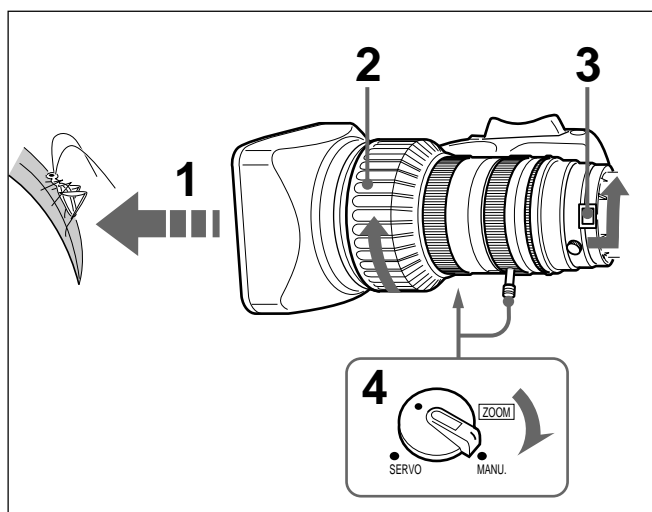
You can see the aperture sensitivity trimmer when removing the rubber cap on the front of the lens driving unit. Use a small-screwdriver to turn the trimmer. If you turn it clockwise, the sensitivity increases, and if you turn it counterclockwise, the sensitivity decreases.

It is recommended that you confirm the aperture sensitivity after replacing the lens.

For more information, refer to the operating instructions for the lens (or consult the lens maker).

Macrophotography

Use the macro function when the subject is at a distance of less than about 90 cm (3 feet) (for the VCL-919BY) from the front of the lens. It is possible to shoot close-ups down to a distance of 10 mm (wide angle, $f = 9$ mm).



- 1** Bring the lens up to the subject so that the image is the required size.
- 2** Move the focusing ring to the closest focus position.
- 3** Slide the M button toward the rear of the camera, and turn the MACRO ring fully in the direction shown by the arrow.
- 4** Move the ZOOM selector to the MANU. position, and turn the manual zoom control to focus the image.

To finish close-up shooting

Return the MACRO ring to its original position (turn fully in the opposite direction to the arrow in the figure).

To reduce the size of the image

After completing steps **1** to **4** above, if you wish to reduce the size of the image, turn the MACRO ring back slightly, then use the manual zoom control again to focus the image.

Settings for Special Cases

Settings for special cases

Shooting conditions	Setting	Effect
The background is very bright, and the subject is too dark.	Set the A.IRIS MODE switch to BACK L., turning the indicator on.	This lightens the foreground.
The subject is under a spotlight.	Set the A.IRIS MODE switch to SPOT L., turning the indicator on.	This prevents white burn-out in highlights of faces and clothes.
The subject is completely still (e.g. when shooting documents, drawings, etc.).	Enable the EVS (Enhanced Vertical definition System) function. Set EVS to ON on page P1 <SHUTTER> of the PAINT menu. Note Enabling the EVS function tends to increase the occurrence of aliasing problems (moiré patterns). Therefore, normally leave the function disabled.	This enhances the vertical resolution.
When you wish to give a lush effect, as when shooting a wedding or similar occasion.	Set PRESET MATRIX to HI SAT on page P8 <USER MATRIX> of the PAINT menu.	This increases the saturation of primary colors.
Shooting under fluorescent lighting.	Set PRESET MATRIX to FL on page P8 <USER MATRIX> of the PAINT menu.	This eliminates the blue-green cast, and restores natural hues.
When adjusting for skin detail or tone (Example: When shooting to hide skin details)	See “Skin Detail Correction” or “Adjusting Color in the Specified Area” (below).	Adjusts the skin detail or tone to a designated active area.
To make focusing before shooting easier.	Press the EZ FOCUS button, turning the “easy focus” function on.	This opens the aperture to make it easier to focus before beginning shooting.
To begin shooting immediately when there is no time to make adjustments.	Press the EZ MODE button, turning the “easy mode” function on.	This provides automatic adjustment to a set of standard values, to allow immediate shooting.

Skin Detail Correction

You can adjust the skin tone by setting the items on page P7 <SKIN DTL/MATRIX> of the PAINT menu.

For details, see “Structure and setting values of the PAINT menu” on page 64.

Adjusting Color in the Specified Area

You can adjust the specified color using scene files. Perform the same procedure with the skin detail correction to designate the target area .

Appendix

Important Notes on Operation

Fitting the zoom lens

It is important to fit the lens correctly, as otherwise damage may result. Be sure to refer to the section “Fitting the Lens” (See page 29).

Do not cover the unit while operating

Putting a cloth, for example, over the unit can cause excessive internal heat build-up.

Operation and storage

Avoid storing or operating the unit in the following conditions.

- In excessive heat or cold (operating temperature range: -10°C to $+45^{\circ}\text{C}$ (14°F to 113°F))
Remember that in summer in warm climates the temperature inside a car with the windows closed can easily exceed 50°C (122°F).
- In damp or dusty locations
- Locations where the unit may be exposed to rain
- Locations subject to violent vibration
- Close to radio or TV transmitters producing strong electromagnetic fields.

Viewfinder

- Do not leave the camera with the eyepiece pointing directly at the sun.
The eyepiece lens can concentrate the sun’s rays and melt the interior of the viewfinder.
- Do not use the viewfinder close to strong magnetic fields. This can cause picture distortion.

Shipping

Use the optional LC-421 Carrying Case for optimal shipping.

If sending the camera by truck, ship, air or other transportation service, first store it in the carrying case, then pack the carrying case in the supplied carton (or an equivalent).

Care of the unit

Remove dust and dirt from the surfaces of the lenses or optical filters using a blower.

If the body of the camera is dirty, clean it with a soft, dry cloth. In extreme cases, use a cloth steeped in a little neutral detergent, then wipe dry. Do not use organic solvents such as alcohol or thinners, as these may cause discoloration or other damage to the finish of the unit.

In the event of operating problems

If you should experience problems with the unit, contact your supplier or Sony service representative.

Connection with peripheral equipment

Before attaching/detaching peripheral equipment to/from the camera head, be sure to turn off the camera. Otherwise, the camera may not function properly.

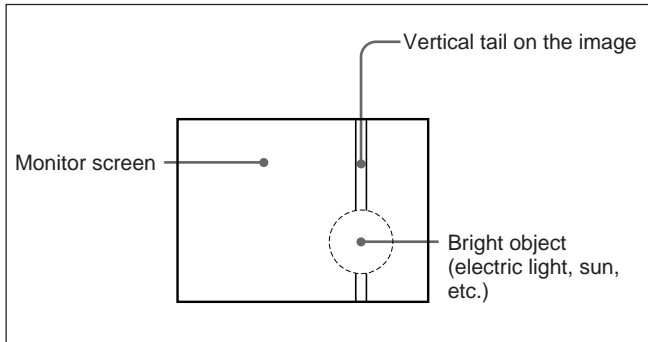
Important Notes on Operation

Characteristics of CCD Sensors

The following effects may appear in the image. They are characteristic of cameras using CCDs (Charge-Coupled Devices), and do not indicate a malfunction.

Vertical smear

When shooting a very bright object, such as a light, the highlight tends to produce vertical tails. This effect is much reduced in this camera.



White flecks

If the camera is operated at a high temperature, white flecks may appear in the image.

Warning Indications

If a fault occurs during operation, a warning is given by the REC/TALLY and BATT indicators in the viewfinder and the tally lamp lighting or flashing, and also by warning indications on the viewfinder screen.

When you are using a DSR-1/1P or PVV-3/3P, the WARNING indicator on the VTR also lights or flashes, and warning indications appear in the display window. There is also a warning tone in the earphone.

Warning indications

Camera			VTR			Fault	VTR action	What to do
REC/TALLY indicator and tally lamp	BATT indicator	Viewfinder screen indication	WARNING indicator	Display window	Warning tone			
	—	—		RF (during recording only)	●●●●●●●● (During recording only)	The video heads are clogged, or there is some other fault in the recording system.	The VTR emits a warning tone when it detects head clogging.	Carry out head cleaning, referring to the instruction manual for the VTR. If the problem persists after cleaning the heads, disconnect the power and consult your Sony dealer.
	—	—		SERVO	●●●●●●●●	The servo lock has been lost.	Recording continues, but the recording may not be satisfactory.	Disconnect the power and consult your Sony dealer. (The SERVO indication may flash momentarily when the tape transport starts, but this does not indicate a problem.)
	—	—		HUMID	●●●●●●●● (During recording) ●●●●●●●●●●●●●●●●●●●● (During playback, rewind, or fast forward)	There is condensation.	Recording continues, but if the tape sticks to the drum, recording stops. Playback, rewind, or fast forward stops.	Stop the tape transport. Wait until the HUMID indication does not appear when you power the unit on.
	—	—		SLACK	●●●●●●●●●●●●●●●●●●●●	The tape is not wound properly.	The operation stops. (Refer to the service manual or maintenance manual.)	Press the EJECT button to eject the cassette. Close the cassette compartment and check that the top panel has descended before powering off. Then consult your Sony dealer. (Do not attempt to insert any cassette.)
	—	—	 (During recording only)	TAPE (During recording only)	●●●●●●●●	The tape is near the end.	Operation continues.	Change the cassette if necessary.
	—	—		TAPE (flashing)	●●●●●●●●●●●●●●●●●●●●	The tape is at the end.	Recording, playback, and fast forward all stop.	Change the cassette.
		BATT 11.0V		BATT (flashing)	●●●●●●●●●●●●●●●●●●●● (During recording)	The battery is almost exhausted.	Operation continues.	Change the battery when possible.
		BATT 10.5V		BATT (flashing)	●●●●●●●●●●●●●●●●●●●●	The battery is exhausted.	Operation continues.	Change the battery.

Continuous Flashing once per second Flashing four times per second

●●●●●●●● Four beeps per second ●●●●●●●● One beep per second ●●●●●●●●●●●●●● Continuous

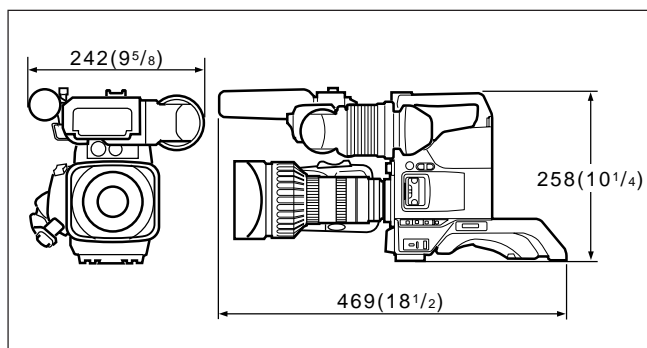
For the warnings appearing in the viewfinder when a VTR is connected, see the section "Viewfinder Normal Indications" (page 52).

Specifications

DXC-D50/D50P/D50WS/D50WSP Camera Head

Imaging element	Three-chip interline transfer CCD
Pixel resolution	980 (horizontal) × 504 (vertical)
Imaging area	DXC-D50/D50P: 8.8 × 6.6 mm (² / ₃ -inch, 4:3 optical system) DXC-D50WS/D50WSP: 9.6 × 5.4 mm (² / ₃ -inch, 16:9 optical system)
Built-in filter settings	1: CLEAR 2: ¹ / ₄ ND 3: ¹ / ₁₆ ND 4: ¹ / ₆₄ ND
Lens mount	Bayonet mount
Signal standards	EIA standard signal (NTSC color system) (DXC-D50/D50WS) CCIR standard signal (PAL color system) (DXC-D50P/D50WSP)
Scanning system	525 lines, 2:1 interlace (DXC-D50/D50WS) 625 lines, 2:1 interlace (DXC-D50P/D50WSP)
Scanning frequencies	Horizontal: 15.734 kHz (DXC-D50/D50WS) 15.625 kHz (DXC-D50P/ D50WSP) Vertical: 59.94 Hz (DXC-D50/ D50WS) 50.00 Hz (DXC-D50P/D50WSP)
Synchronization	Internal sync External sync, using signal input (VBS or BS) to the GEN LOCK IN connector of an optional camera adaptor or input from the GEN LOCK connector of a camera control unit to the CCU/ VTR/CMA connector of an optional camera adaptor.
Horizontal resolution (center)	DXC-D50/D50P: 920 TV lines DXC-D50WS/D50WSP: 850 TV lines (4:3 mode), 800 TV lines (16:9 mode)
Minimum illumination	0.5 lux (at f/1.4, +36 dB) 0.8 lux (at f/1.8, +36 dB)

Sensitivity	2000 lux (f/11.0 standard, 3200 K)
Gain levels	Selectable -3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 18 dB, 24 dB, 30 dB, 36 dB
Video output	Composite signal 1.0 Vp-p, sync negative, 75-ohm, unbalanced Y/C separate signals Y: 1.0 Vp-p, sync negative, unbalanced C: burst level 0.286 Vp-p (DXC- D50/D50WS) or 0.3 Vp-p (DXC-D50P/D50WSP), no sync
Video S/N ratio	65 dB (typical) (DXC-D50/ D50WS) 63 dB (typical) (DXC-D50P/ D50WSP)
Registration	0.05% for all zones, without lens
Input/output connectors	VIDEO OUT connector: BNC, 75-ohm, unbalanced LENS connector: 12-pin, for ² / ₃ -inch lens VF connector (front): 20-pin REMOTE connector: 10-pin MONITOR OUT connector: BNC, 75-ohm, unbalanced
Power supply	12 V DC
Power consumption	14 W
Operating temperature	-10 °C to +45 °C (14 °F to 113 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Mass	Approx. 2.2 kg (4 lb 14 oz)(camera head)
External dimensions in millimeters (inches)	



VCL-919BY Zoom Lens

Focal length	9.0 to 171 mm
Zoom	Manual or power, selectable; zoom ratio: $\times 19$
Maximum aperture	1:1.8
Aperture	Manual or automatic, selectable; f/1.8 to f/16 and C (closed)
Subject area (at 0.9 m (3 feet))	Wide angle: 789 \times 592 mm (31 $\frac{1}{8}$ \times 23 $\frac{3}{8}$ inches) Telephoto: 43 \times 32 mm (1 $\frac{3}{4}$ \times 1 $\frac{5}{16}$ inches)
Focusing range	Infinity to 0.9 m
Filter attachment threads	82 mm dia., 0.75 mm pitch
Mounting	Sony $\frac{2}{3}$ -inch bayonet mount
Mass	Approx. 1.45 kg (3 lb 3 oz) (including lens hood)
External dimensions (w/h/d)	122 \times 102 \times 223.5 mm (4 $\frac{7}{8}$ \times 4 $\frac{1}{8}$ \times 8 $\frac{7}{8}$ inches) (with lens hood, without lens grip)

DXF-801/801CE Viewfinder

Picture tube	1.5-inch monochrome
Indicators	REC/TALLY ($\times 2$), TAKE, BATT, SHUTTER, GAIN UP
Resolution	600 TV lines
Power supply	12 V DC
Power consumption	2.1 W
Mass	Approx. 620 g (1 lb 5 oz)
Maximum external dimensions (w/h/d)	241 \times 91 \times 203 mm (9 $\frac{1}{2}$ \times 3 $\frac{5}{8}$ \times 8 inches)
Scan size	Switchable between 4:3 and 16:9

Supplied accessories

VCL-919BY Zoom Lens¹⁾ (1)
DXF-801/801CE Viewfinder²⁾ (1)
Microphone²⁾ (1)
Wind screen²⁾ (1)
VCT-U14 Tripod Adaptor²⁾ (1)
Lens mount cap (1)
Flange focal length adjustment test chart (1)
Operating Instructions (1 set)

Design and specifications are subject to change without notice.

Related Products

There is a range of Sony products available to meet every conceivable video shooting requirement. For details, consult your Sony sales representative or supplier.

Camera adaptor products

CA-D50/D50P/TX7/TX7P/TX50/TX50P Camera Adaptor
CMA-8A/8ACE AC Adaptor
RM-M7G Camera Remote Control Unit
RCP-D50/D51 Remote Control Panel

VTR products

DSR-1/1P Digital Videocassette Recorder
PVV-3/3P Portable Videocassette Recorder
DVW-250/250P, DSR-50/50P Portable Videocassette Recorder

Microphone products

ECM-670/672 Electret Condenser Microphone
C-74 Condenser Microphone
CAC-12 Microphone Holder
EC-0.5C2 Microphone Cable
EC-0.3C2 Microphone Cable

1) DXC-D50K/D50PK

2) DXC-D50K/D50L/D50WSL/D50PK/D50PL/D50WSPL

Specifications

Studio equipment

CCU-D50/D50P Camera Control Unit
DXF-51 5-inch Viewfinder (monochrome)
DR-100 Intercom Headset

Cables and miscellaneous

The suffix number on a cable part number indicates the length in meters: e.g. a CCZ-A2 is 2 meters long. (Approximate equivalents in feet: 2 m = 6 ft, 5 m = 16 ft, 10 m = 33 ft, 25 m = 82 ft, 50 m = 164 ft, 100 m = 328 ft)

Camera cables with Z-type 26-pin connectors
CCZ-A2/A5/A10/A25/A50/A100

Camera cables with Z-type 26-pin and Q-type 14-pin connectors CCZQ-A2/A5/A10/A2AM

CCZZ-1B/1E Cable Extension Connector

Camera cables with Q-type 14-pin connectors
CCQ-2BRS/5BRS/10BRS
CCQ-10AM/25AM/50AM/100AM

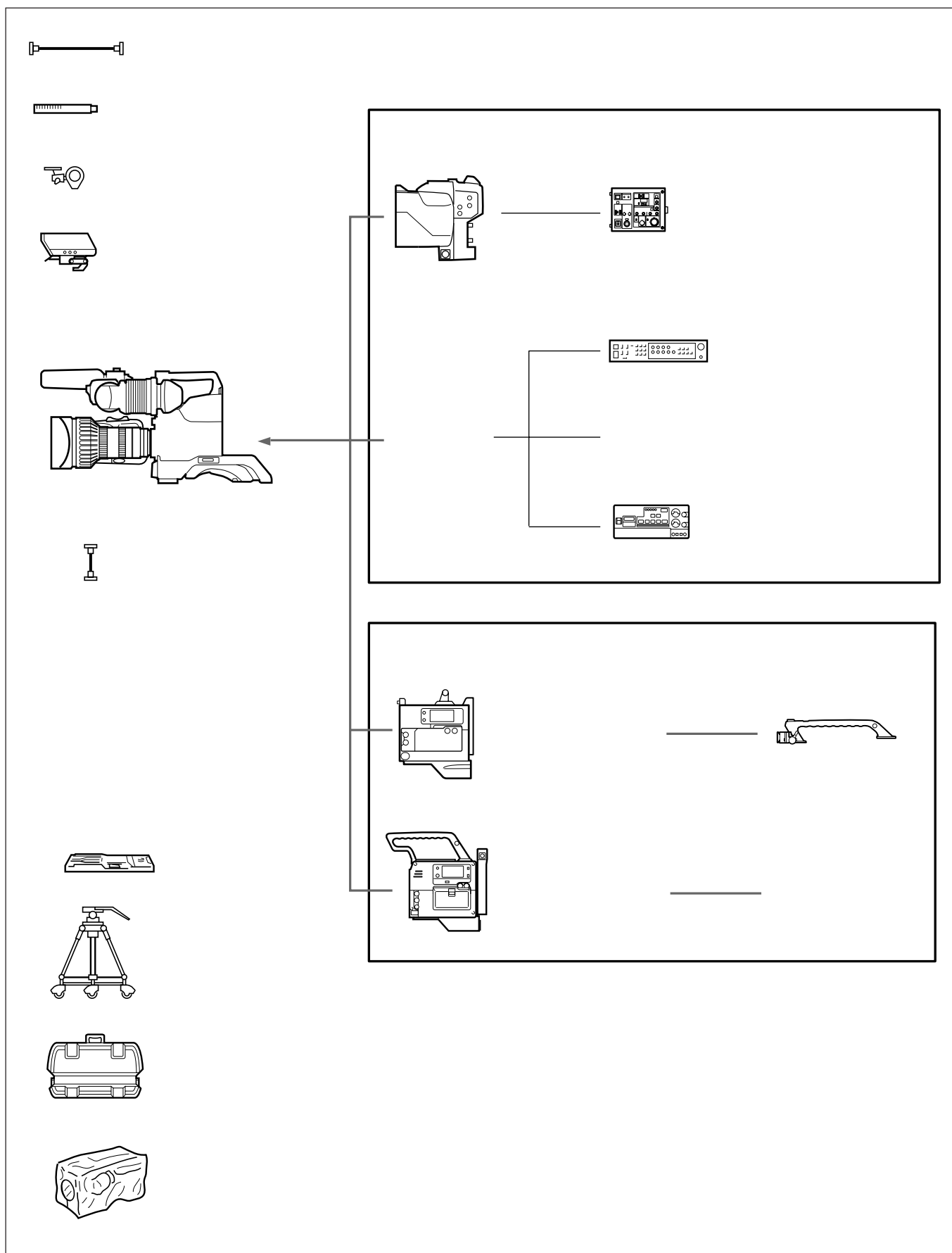
CCZJ-2 Camera Cable with Z-type 26-pin connector and J-type 10-pin connector

LC-421 Carrying Case

LCR-1 Rain Cover

LC-DS300SFT Soft Case

CAC-H101, CAC-H102 Long Grip Kit



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